Pro Tools Basics

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Pro Tools®

Basics Guide

Version 4.2 for all Pro Tools systems

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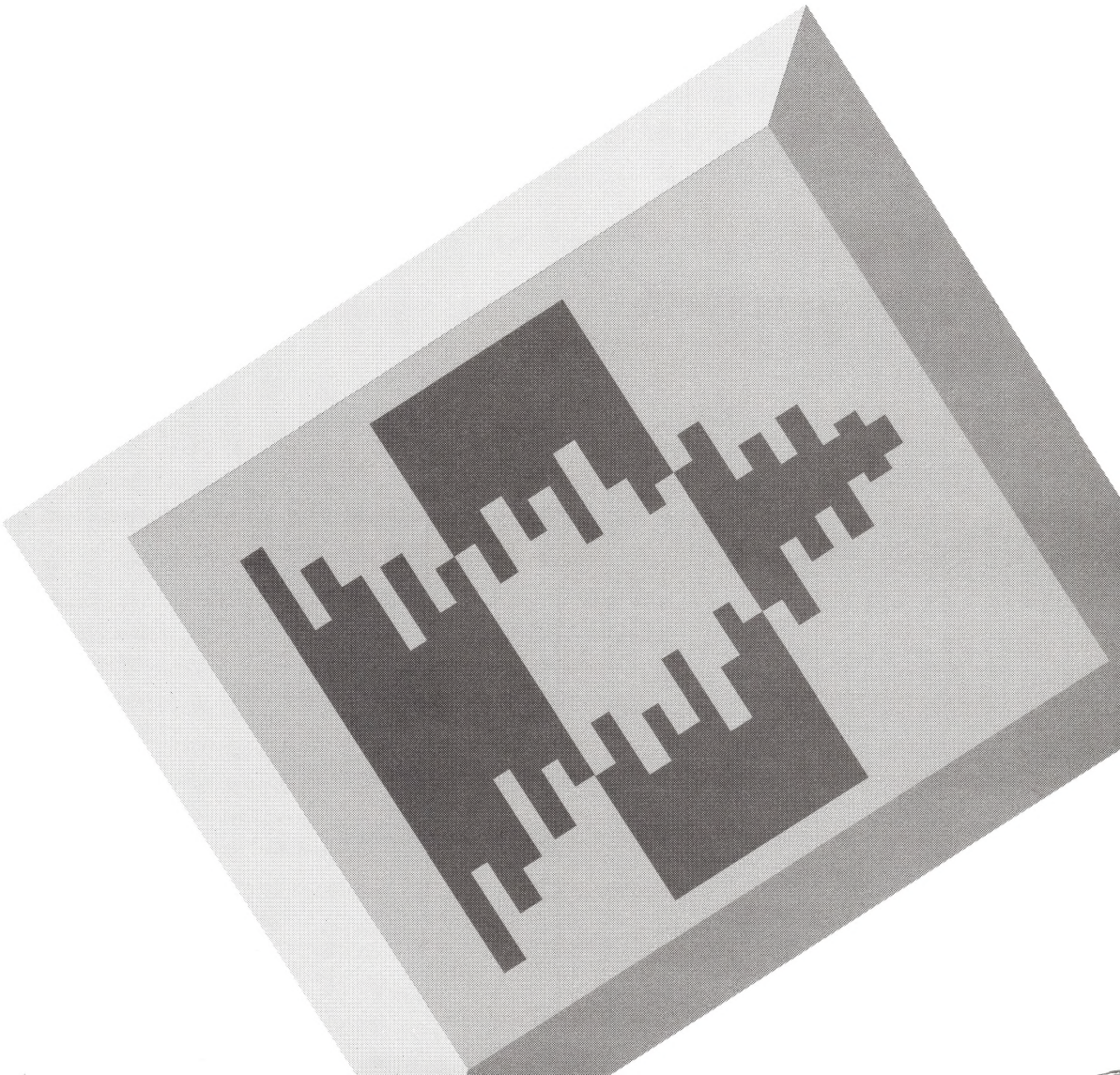
Getting Started



Getting Started

About the Pro Tools Guides

Your Pro Tools System includes the following guides:

System Installation Guide The starting point for new Pro Tools users. This guide includes step-by step instructions for installing your Pro Tools hardware and software, and for connecting your Pro Tools system to your studio. It also provides an overview of your system's capabilities.

Basics Guide An overview of digital audio workstation technology. This guide is recommended for anyone new to Pro Tools, or for anyone unfamiliar with terms such as non-linear recording, non-destructive editing, multiple edit playlists, automation, or DSP allocation.

Reference Guide Explains the new features of Pro Tools 4.2, and provides detailed instructions for the main functions of Pro Tools. This guide covers recording, editing, mixing, synchronization, working with video, and using Plug-Ins. It also provides a quick reference to Pro Tools menus and keyboard shortcuts.

MIDI Controllers Guide Contains instructions for configuring and using third-party MIDI controllers to move faders and other Pro Tools controls on-screen.

Conventions Used in These Manuals

Keyboard or *Numeric Entry Shortcuts* show a few of the keyboard equivalents for the commands in each section.

User Tips are helpful hints for getting the most from each feature of your Pro Tools system.

Important Notices include information that could affect your Pro Tools session data or the performance of your Pro Tools system.

About This Basics Guide

Before starting with this guide, you should have installed your Pro Tools hardware and software according to the instructions in the *Pro Tools System Installation Guide*.

Chapter 2: Essential Concepts Introduces the components of the Pro Tools digital audio workstation and explains concepts such as random-access recording and editing, virtual tracks, playlists, and digital mixing.

Chapter 3: Creating Sessions A guided tour of Pro Tools' Mix, Edit and Transport windows. You will learn about many of the on-screen controls that you will use in your own Pro Tools sessions.

Chapter 4: Working with Tracks Provides the information necessary to set up your own Pro Tools sessions, such as input and output assignments, voice allocation, audio vs. MIDI tracks and track grouping.

Pro Tools System Configurations

Because Pro Tools software can be used in a variety of hardware configurations, the Pro Tools manuals contain operating instructions for each of the following types of Pro Tools systems:

Pro Tools TDM systems

Pro Tools TDM systems are available in two configurations.

Pro Tools 24 core systems include:

- a d24 Audio Card,
- a DSP Farm Card,
- a compatible Digidesign Audio Interface, and
- Pro Tools software.

The Pro Tools 24 core system provides up to 32 tracks of simultaneous recording and playback (your actual track count depends on your CPU speed, system memory, and hard drive performance).

Pro Tools III core systems include:

- a Pro Tools III Disk I/O Audio Card,
- a Pro Tools III DSP Farm Card,
- a compatible Digidesign Audio Interface, and
- Pro Tools software.

A Pro Tools III core system provides up to 16 tracks of simultaneous recording and playback (your actual track count depends on your CPU speed, system memory, and hard drive performance).

Pro Tools Non-TDM systems

Pro Tools Non-TDM systems are available in three configurations.

Pro Tools Project systems include:

- a Pro Tools Project Audio Card,
- a compatible Digidesign Audio Interface, and
- Pro Tools software.

A Pro Tools Project system provides up to 8 tracks of simultaneous recording and playback (your actual track count depends on your CPU speed, system memory, and hard drive performance).

Pro Tools with Audiomedia includes:

- an Audiomedia III (PCI) card, and
- Pro Tools software.

Pro Tools with Audiomedia provides 2 tracks of simultaneous recording and 8 tracks of simultaneous playback.

Pro Tools with PowerMix consists of Pro Tools software and the DAE PowerMix software (included with all Pro Tools Systems). PowerMix allows you to run Pro Tools on a Power Macintosh without any additional audio hardware. PowerMix provides 2 tracks for simultaneous recording and up to 16 tracks of simultaneous playback (The actual number of playback tracks depends on your CPU speed, system memory, and hard drive performance—refer to the *Pro Tools System Installation Guide* for details on system requirements.).

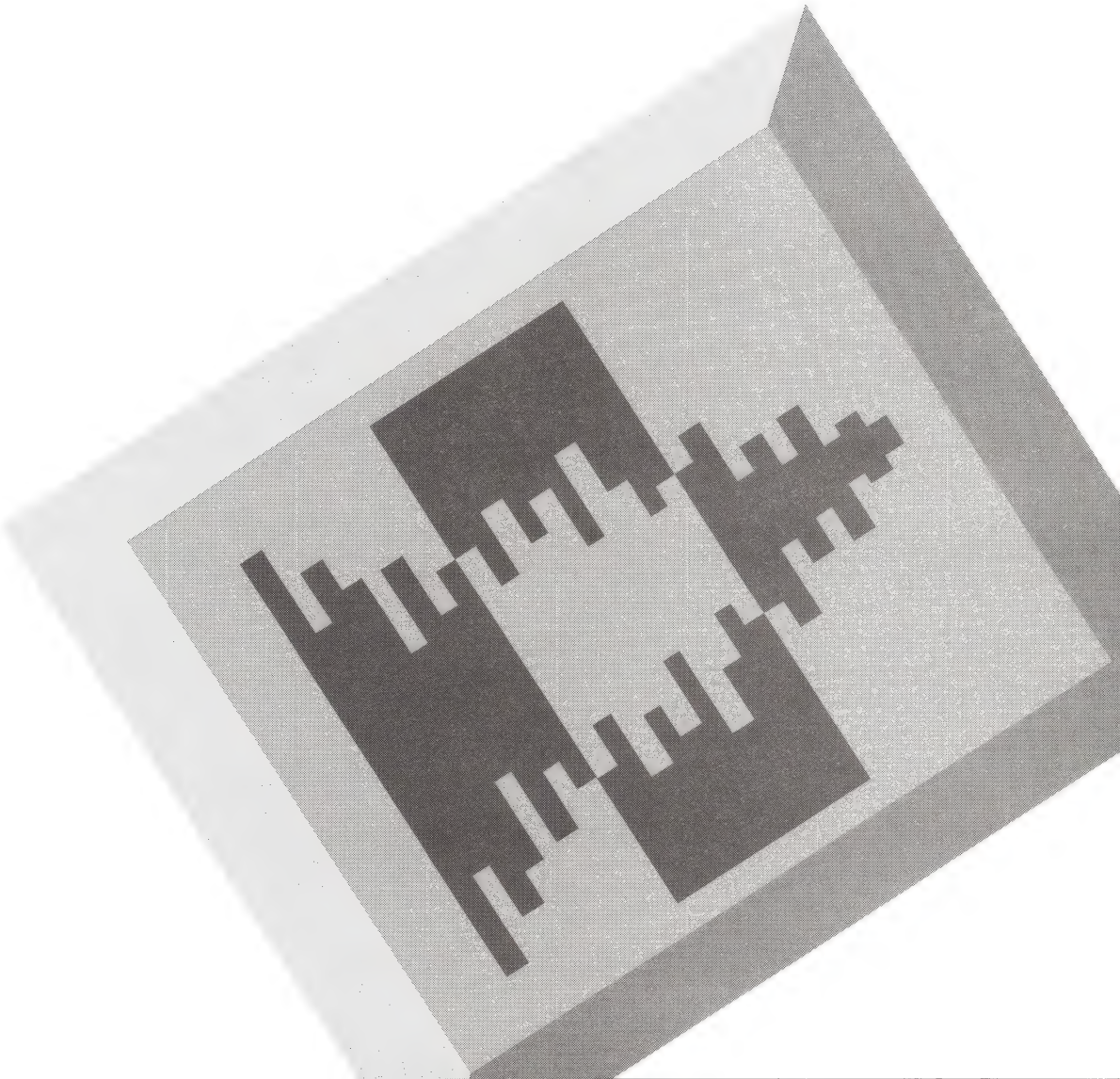
Pro Tools Channel Capabilities

In this case *channel* refers to a physical input or output on your Pro Tools system. The number of channels available is determined by which Pro Tools system (and in the case of Pro Tools 24 and Pro Tools III, which Audio Interface) you are using.

- The 888/24 I/O, 888 I/O, 882/20 I/O and 882 I/O each provide 8 channels of input and output, and work with Pro Tools 24, Pro Tools III or Pro Tools Project.
- Pro Tools Audiomedia III provides 2 channels of input and output via analog RCA or S/PDIF digital.
- Pro Tools with DAE PowerMix, using the Power Macintosh's built-in A/D converters, provides 2 channels of input and output.

For complete information on the actual recording and playback capacity of your Pro Tools system, refer to Appendix A of the *Pro Tools Reference Guide*.

Essential Concepts



Chapter 2

Essential Concepts

2

Introduction

Pro Tools is a digital audio workstation (DAW) that uses the power of personal computers and digital signal processing to record multitrack digital audio directly to hard disk. It fully supports other elements of your studio such as MIDI instruments and effects processors. This powerful combination of technologies provides you with the means to record, edit, mix, and master professional-quality audio in a single integrated system.

Along with this new generation of digital tools come a number of concepts that may be new to you if this is your first exposure to a digital workstation. This book provides an overview of Pro Tools fundamentals.

Before you go any further in this guide, you should have installed your Pro Tools hardware and software, and connected your studio according to the instructions in your *Pro Tools System Installation Guide*. You can then return to this guide to start using the powerful capabilities of Pro Tools for creative audio production.

How Hard Disk Recording Differs From Tape-based Recording

Linear Versus Random-access Recording

If you're new to disk-based recording, you'll soon discover that hard disk recording and tape-based recording are two very different things. Tape recorders are a *linear* recording medium—the linear element being the tape itself as it moves from beginning to end. In order to hear a portion of a song recorded on tape, you have to rewind or fast forward the tape to a particular point and play it.

Hard disk recording is a *non-linear* (or random access) medium—you can go immediately to any spot in a recording at the click of the mouse, without having to rewind or fast forward to get there. The sound isn't recorded at a fixed location on a reel-to-reel tape, but stored in digital format on a hard disk.

A hard disk has one or more platters where the data is stored; it also has a read/write head, which records and plays back the data. To play the digital audio information stored on the hard disk, your computer simply moves the disk's read/write head to a specific location on the platter. Among the many benefits of hard disk technology, two are immediately relevant to recording: first, you can access any part of a recording almost immediately; second, you can non-destructively rearrange the parts of a recording even after you've recorded them.

Rearranging a recording is achieved by simply making the hard disk read parts of the recording in a different order (just like moving a CD player's laser to different locations on a CD). Pro Tools software makes this very easy to do by letting you create what's called a *playlist*.

A playlist is nothing more than a user-defined list of the sections in a recording (the intro, verse, chorus, solo, and so on) and the order in which you wish to play them. By changing the order of items in a playlist, you can rearrange or even repeat sections of a recording without altering the original data. Refer to the *Editing* chapter of your *Pro Tools Reference Guide* for instructions on using playlists.

Your Hard Disk is Your Workspace

You can think of your hard disk as a temporary "workspace" for your current project. When you begin composing and recording, you do it on disk. When you finish the project, you move it or *archive* it on DAT tape, recordable CD, or some other long-term storage medium. Your hard disk is then free for a new project.

The amount of recording time a hard disk provides depends on the size of the hard disk as well as the sample rate and bit depth of the audio you are recording. For a Pro Tools III system, each 44.1 kHz/16-bit mono track will take roughly 5 MB of hard disk space per minute of recording. If you are using Pro Tools 24 to record 24-bit audio at 44.1 kHz, each mono track will consume 7.5 MB of disk space per minute. This means that with Pro Tools III or Pro Tools 24, if you are recording on 16 channels simultaneously at 44.1 kHz and at the maximum bit depth, you can use up to 80 MB (Pro Tools III) or 120 MB (Pro Tools 24) of disk space per minute.

Once you've experienced the power and flexibility of disk-based recording, you'll probably never want to go back to tape.

Essential Concepts Defined

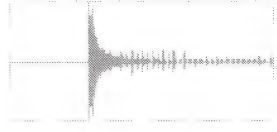
With Pro Tools, certain recording terms such as *track* and *channel* take on new meanings which you should understand before you start using your system. Here are some essential terms you should know:

Session

A 24-bit session

A *session* is the document which Pro Tools creates when you start a new project. It contains maps of all of the elements (audio, MIDI, automation, memory locations, edit playlists, and so on) associated with the project. 24-bit sessions (which require Pro Tools 24 to create and play back) display a small "24" in their icon.

Region



An audio region

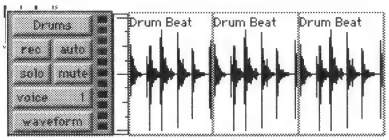
A *region* is a piece of audio, MIDI, or automation data. An audio region could be a guitar riff, a verse of a song, a sound effect, a piece of dialog, or even an entire sound file. In Pro Tools, regions are captured (defined automatically or with the Selector tool) from an audio or MIDI file and strung together to create a *playlist*.

Playlist

The playlist selector pop-up menu

A *playlist* is a group of regions strung together on a track in a specific order. Pro Tools supports multiple edit playlists per track. This allows you to assemble different versions of a track and conveniently choose among these with a pop-up menu on the track itself. Because audio is recorded to hard disk in Pro Tools, this list merely tells the hard disk which audio files to read in what order. By reusing regions in a playlist, sections of a recording can be repeated without using any additional disk space.

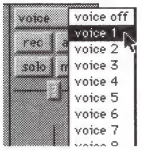
Track



An audio track in the Edit Window

A *track* is where audio or MIDI regions are strung together in a playlist. A track contains a single playlist which can be made up of an entire audio file or many separate regions. It can be made up of similar elements, as in the case of a guitar solo track made up of regions from several different "takes" of the solo. It can also be made up of dissimilar elements, as in the case of a track made up of several sound effects. Refer to Appendix A of the *Pro Tools Reference Guide* for details on the track capabilities of your system.

Voice

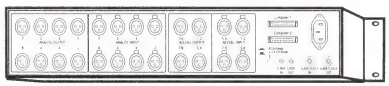


Choosing a voice for a track in the Mix window

A *voice* refers to the number of digital audio events that Pro Tools can play back simultaneously. For example, Pro Tools with Audiomedia III is an 8-voice system and can therefore playback 8 different audio events at one time. Pro Tools with DAE/PowerMix, on the other hand, can be an 8-, 12-, or 16-voice system depending on the speed of your CPU and hard disk. Refer to Appendix A of the *Pro Tools Reference Guide* for details on the voice capabilities of your system.

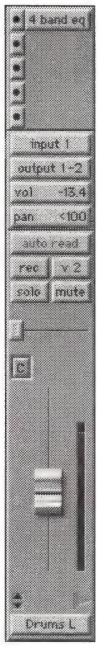
Channel

The term *channel* is used to describe two related components of a Pro Tools system.



Rear view of 888/24 I/O Interface and its inputs and outputs

The first use of the term *channel* refers to a physical input or output of your Pro Tools Audio Interface. The 888/24 I/O and 882/20 I/O Interfaces each provide 8 *channels* of input and output. Audiomedia III provides 2 channels of input and output, as does Pro Tools PowerMix (by utilizing the stereo mic/headphone jacks on your CPU).

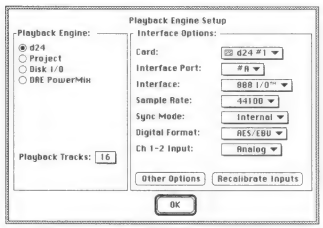


The second use of the term *channel* is in reference to a mixer module/strip in the Pro Tools Mix window. The term *channel strip* refers to the mixer strip of any disk track, auxiliary input, or MIDI track in a session. Pro Tools supports up to 128 audio channel strips, and an upper limit of 64 MIDI channel strips on Pro Tools 24 and Pro Tools III systems. (Refer to Appendix A of the *Pro Tools Reference Guide* for limits of other systems.) While audio and MIDI channel strips share many of the same visual characteristics, such as faders, pop-up menus, and so on, they are different in essential ways. For example, audio track and auxiliary channel strip faders control the Pro Tools DSP mixer, while MIDI channel strip faders send only MIDI volume data (MIDI controller 7).

A channel strip from the Mix window

Playback Engine

All Pro Tools systems allow you to choose the *Playback Engine* for a session at any time. This determines the number of tracks available to play back your session.



The Playback Engine dialog

The Playback Engine allows you to reconfigure Pro Tools to use another Digidesign DSP card or the built-in sound capabilities of a Power Macintosh to play back your session. (The latter option requires DAE PowerMix, a DAE Extension available for most systems).

Using the Playback Engine dialog, Power Macintosh users can change the number of tracks available for their sessions. The Playback Engine allows you to get the highest possible fidelity and the greatest number of tracks on your Pro Tools system. For details on choosing a Playback Engine, refer to the chapter entitled *Creating Sessions* later in this guide.

The Difference Between Virtual Tracks and Physical Tracks

Pro Tools features an architecture that is unique to the digital audio workstation: the *virtual track* system. A tape deck records only *physical* tracks: there are a fixed number of physical tracks on the record and play heads, and the same number of physical tracks on the tape itself. A 16-track analog recorder can record a maximum of 16 tracks, and can play back all of those tracks simultaneously.

A virtual track system operates on a different principle. Pro Tools provides up to 128 virtual tracks that can be recorded upon and cued up for playback, but cannot all be played back simultaneously. (Refer to Appendix A of the *Pro Tools Reference Guide* for a complete list of track counts for each Pro Tools system.)

The benefit of a virtual track system becomes clear when you think about the nature of a recorded track. Although some audio tracks in a music session (a drum or bass track, for example) often contain audio from beginning to end, many tracks actually only occupy a small portion of the entire tape.

If you were to look at the placement of audio on a typical multitrack tape, it would contain "patches" of audio interspersed with blank areas. Even short passages like guitar solos would probably be given an entire track in a typical studio session. Most producers would tend not to place other material on the same track (a vocal overdub, for example), because it would require different

EQ, pan, effects, and level settings. A virtual track system addresses this situation by allowing you to create separate tracks for each audio element, each with its own volume, pan, EQ, effects sends, and automation.

This provide significant advantages: you can have many more *tracks* than *voices* in a session. You can then simply choose which of these tracks you wish to play (up to the total number of available voices). You never need to erase tracks to make room for other tracks—provided that you have enough space available on your hard disk to store all of them.

A second advantage is that Pro Tools virtual tracks are *dynamically allocated*. When a "hole" opens up in one track, its voice becomes temporarily available and another track can "pop through" and begin to play. If the first track reaches a point where audio occurs again, the voice reverts to the original track. Pro Tools gives you the ability to assign priorities to the tracks in your session, allowing you to determine the order in which they use available voices. The details of this process are described in the *Editing* chapter of the *Pro Tools Reference Guide*.

While virtual tracks are a very powerful feature, keep in mind that virtual tracks require DSP mixing power. For this reason, you may want to use another powerful Pro Tools feature, *multiple edit playlists*. Maintaining multiple edit playlists allows you to create comps and alternate arrangements of material, but edit playlists do not require any additional DSP power. For more details about using this feature, refer to the *Working with Tracks* chapter later in this guide.

Pro Tools TDM systems

Digidesign's TDM (or *time division multiplexing*) technology is based on the concept of a single, high-speed data highway, or bus. In Pro Tools 24 and Pro Tools III TDM systems, individual channels from sources such as disk tracks, sends, or busses are sent out from Digidesign audio cards, and combined together or *multiplexed* into a single bus (a common connection point). At the receiving end, the audio cards can listen to any connection on the bus, and take whatever data they need. Fortunately, you don't have to worry about any of these housekeeping tasks: Pro Tools software and hardware take care of all of the interconnection, transmission and reception of audio for you.

TDM brings two fundamental features to Pro Tools 24 and Pro Tools III:

- Comprehensive digital mixing
- The ability to add DSP software Plug-Ins and hardware cards from Digidesign and its Development Partners. These Plug-Ins can be used as real-time inserts on channels, auxiliary inputs and/or master faders. (These are in addition to *AudioSuite* Plug-Ins, which are file-based processors provided with all Pro Tools systems.)

With TDM, Pro Tools 24 and Pro Tools III support a digital mixing environment with:

- 32 internal mix busses
- Up to 5 unity-gain inserts per channel
- Up to 5 mono or stereo auxiliary sends per channel (switchable between pre/post fader operation, and assignable to any physical output or any of the 32 internal mix busses)
- Dynamic automation of volume, pan, mute, Plug-Ins, and sends, with graphic editing for each
- Automatable mono or stereo auxiliary inputs/returns
- Automatable master faders
- Integration of external analog or digital sources using available Audio Interface inputs and outputs, or optional audio I/O interfaces from Digidesign and its Development Partners

- Support for Digidesign ProControl
- Support for MIDI controllers from Mackie Designs, Penny & Giles, JL Cooper, and Peavey.

All routing and bussing functions are accessible through on-screen pop-up menus. This means less time-consuming patching of external devices as well as complete audio integrity, with internal digital mixing, digital routing, and automation.

With Pro Tools 24 or Pro Tools III and TDM, DSP power is *dynamically configurable*, meaning that you can choose how to allocate it. In most cases, you'll start the allocation process by configuring your mixer, then assigning Plug-In effects according to how much remaining DSP power you have.

Allocating DSP on TDM systems

The DSP Farm card is one of the most crucial elements of your Pro Tools 24 or Pro Tools III system. Its four Motorola DSP chips provide the power for your TDM Mixer and DSP Plug-Ins. There is a limit to how many functions a single DSP Farm can power at once. This section contains some guidelines for allocating the power of your DSP Farm.

DSP Allocation Basics

As in the analog world, every send bus or output mix that you use demands that a summing mixer exist for that group. On an analog console, the number of these summing mixers is fixed by the configuration of the console. In the Pro Tools mix environment, this number is variable, and depends on the number of output mixes or sends that you choose to create. Pro Tools will then allocate DSP power as it is needed.

In TDM-parlance, we refer to certain mixing or signal processing functions as "using one DSP" or "using two DSPs." This refers to the fact that there are four DSP chips on a DSP Farm card, each of which can only power a certain number of functions. Thus, if you have a single DSP Farm, and you create a big enough TDM mixer, or use enough sends or Plug-Ins, you will eventually use up or "max out" all four DSPs and will be at your limit for mixing and processing (unless you add more DSP Farm cards to your system).

Mixing and TDM DSP Usage

Pro Tools builds a TDM mixer every time a session is opened. Note that the term "mixer channel" applies to tracks, virtual tracks, and auxiliary tracks, as well as sends and returns that use any of the 32 TDM internal busses. When you go beyond a certain number of mixer channels, Pro Tools will use another DSP to create the additional mixer capacity.

The maximum TDM mixer size for Pro Tools systems (assuming sufficient DSP is available) is 128 x 2 channels. A mixer of this size would use five DSPs, meaning it would require an additional DSP Farm card.

Pro Tools does not always automatically free up all unused DSP power when you delete unneeded mixer channels. To reclaim all DSP power after a change in your session configuration, simply close your session and reopen it. Pro Tools will rebuild your new configuration to use DSP power with maximum efficiency.

To monitor the usage of DSP resources during a Pro Tools session, use Digidesign's *Allocator*™ utility which is included with your system. See Appendix B of the *Pro Tools Reference Guide* for instructions on using Allocator, which visually displays how many of your DSP Farm's DSP chips are in use by the current Pro Tools session.

Making Choices Based on Your Needs

The flexibility of having a dynamically-configurable mixing environment comes at a price, since it requires you

to examine your options and make choices based on the type of setup you wish to have—such as how many inputs you want for your mixer, how many Plug-Ins you want to use, or how many sends you need. For example, you could allocate all of the DSP Farm's power to create a mixer with dozens of channels—but you wouldn't be able to use any busses, sends, or TDM Plug-Ins (Remember, *AudioSuite* Plug-Ins are always available). Alternatively, you could create a mixer with a smaller number of mixer channels plus some sends & auxiliary returns, a submaster, and a DSP Plug-In on several tracks.

The important thing to remember is that ultimately, you decide how and where to allocate your DSP resources. You can do this either by choosing one of the session templates supplied with your system as a starting point, or by building your session from scratch. If you are starting from scratch, a good rule of thumb is to start by building your mixer first, since at least one of the DSPs in your system is automatically dedicated to mixing. You can then add Plug-Ins as available DSP allows. (Pro Tools will warn you if you try to exceed the processing capacity of your system.)

DSP Usage with PCI-based TDM Systems

The following conditions apply to mixing with PCI-based Pro Tools 24 and Pro Tools III systems:

- One DSP chip is automatically dedicated to mixing in the TDM environment.
- Using the "16-bit Optimized Mixer" Plug-In, a single DSP chip can power up to a 36 x 2 mixer. The "24-bit Optimized Mixer" Plug-In can power up to a 25 x 2 mixer per chip.
- Each bus or send connection requires DSP to mix signals. (Just as in the analog world, every send bus or output mix that you use demands that a summing mixer exist for that group.) This means that each send, return or auxiliary input that you create will utilize available DSP.
- As you reach the basic mixer limits for a single DSP chip, the DSP Farm will automatically begin allocating DSP resources from another chip (if available), making it unavailable for Plug-Ins.

DSP Usage with TDM Plug-Ins

The basic DSP Requirements for PCI-based Pro Tools 24 and Pro Tools III Core TDM Plug-Ins are as follows:

- Each category of Plug-In (EQ, Dynamics, or Mod Delay, Dither, and Time Adjuster) requires its own individual DSP. This means that even if you use just one Compressor and one EQ, you will use two whole DSPs since EQ and Dynamics are different kinds of Plug-Ins. However, you could use up to 12 different mono Dynamics Plug-Ins (Compressor, Expander, Gate) and use only one DSP, since they are all in the same category of Plug-In.
- Stereo DSP Plug-Ins generally use up twice as much DSP as mono Plug-Ins.
- A single DSP will power up to 12 mono Dynamics Plug-Ins or 6 stereo Plug-Ins.
- A single DSP will power up to 36 total bands of mono EQ (including both 1-Band and 4-Band) or 18 bands of Stereo EQ (including both 1-Band and 4-Band).
- A single DSP will power a maximum of 2 short, 2 slap, and 2 medium mono delays. For stereo usage, a single DSP will power a maximum of 1 short, 1 slap, and 1 medium stereo delay.
- A single DSP will power up to 10 mono Dither Plug-Ins or 5 stereo Dither Plug-Ins.
- A single DSP will power up to 24 mono Time Adjuster Plug-Ins.
- Master Faders don't require additional DSP. Use them freely to control submix levels, send/bus output levels, and so on.

The session templates provided with your system include several useful preconfigured session setups that make efficient use of DSP resources. Try basing your session on one of these templates to help you stay within your "DSP budget." In addition, if your computer has unused slots, you can always increase your available DSP resources by adding additional DSP Farm cards.

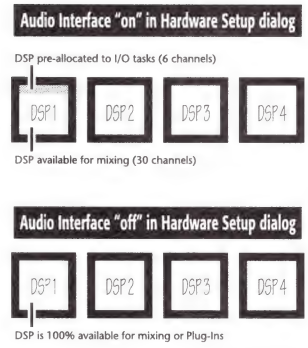
For Additional Information About DSP Allocation

The specifics of DSP allocation can be complex depending on your mixer setup. Refer to Appendix B of the *Pro Tools Reference Guide* for more details on DSP allocation.

Squeezing Extra DSP From a DSP Farm

On PCI-based Pro Tools systems, Pro Tools automatically allocates one DSP chip on your DSP Farm to mixing and I/O tasks. In addition, if you have an Audio Interface connected to the DSP Farm, Pro Tools will allocate a portion of a *second* DSP chip to mixing and I/O tasks for that Audio Interface. Though this is only a small portion of the entire DSP power available on the chip, it effectively dedicates the entire chip to mixing tasks, making it unavailable for Plug-Ins.

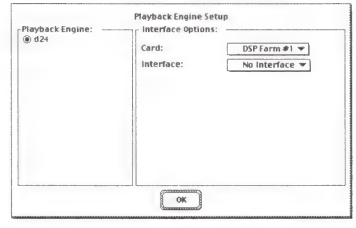
However, if you have extra Audio Interfaces connected to DSP Farms in your system but are not currently using them, you can free up this "pre-allocated" DSP and use it for additional Plug-Ins. Please note that by reallocating DSP away from a DSP Farm's default I/O function, you will not be able to use an Audio Interface connected to that DSP Farm, since you will have effectively turned it off.



Allocation of DSP with an Audio Interface (top) and without an Audio Interface (bottom)

To reallocate I/O DSP on a DSP Farm:

1. Choose Playback Engine from the Setups menu.
2. From the Card pop-up menu, select the DSP Farm whose DSP you wish to reallocate.
3. From the Interface pop-up, select No Interface.
4. Click OK to close this dialog. When the session reopens, the DSP that was formerly allocated to I/O will now be available for mixing or Plug-Ins.



Reallocating DSP in the Playback Engine dialog

TDM Plug-Ins and DAE Memory

TDM Plug-Ins reside in DAE memory. As each Plug-In is used, or *instantiated*, it uses up a portion of DAE memory. DAE allocates its available memory differently for two different types of plug-ins: those that are Power Macintosh-native, and those that are not.

Memory Caching of TDM Plug-Ins (Power Macintosh-Native TDM Plug-Ins only)

With this feature, Power Macintosh-native TDM Plug-Ins will not take up DAE memory space if they are not currently being used. They will only load into DAE memory when you actually use them.

Automatic Memory Sizing (Non-Power Macintosh-Native TDM Plug-Ins)

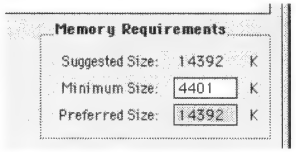
For TDM Plug-Ins that are not Power Macintosh-native, DAE uses an automatic memory sizing feature. DAE automatically configures its memory requirements upon launch by checking to see how many DSP Farms you have in your system.

If You Are Using Many Non-Power Macintosh Native Plug-Ins

If you plan to use a large number of Plug-Ins that are not Power Macintosh-native, you may wish to allocate additional memory to DAE using the Finder's Get Info dialog to avoid a low-memory situation with DAE.

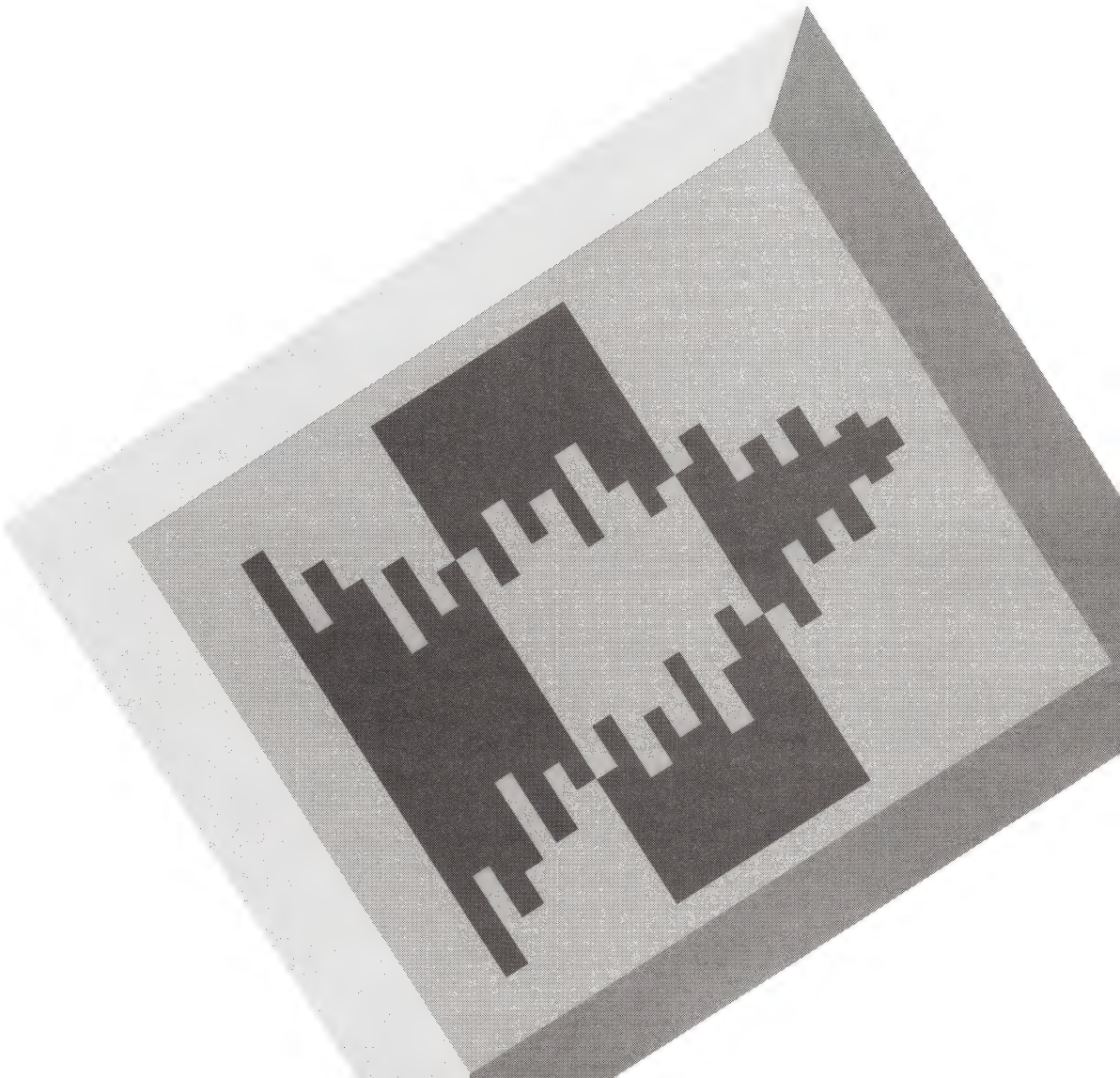
To allocate additional memory to DAE:

1. Start Pro Tools so that DAE can calculate its basic memory allocation.
2. Go to the Finder, and under the Apple menu, choose About This Computer.
3. If you have 3 megabytes or more of memory available (as indicated in the Largest Unused Block portion of this window), go to step 4. If you have less than 3 megabytes of free memory (3,000k), stop here: we don't recommend allocating additional memory to DAE unless you purchase additional RAM (random-access memory) and install it in your computer.
4. Quit Pro Tools.
5. Open the DAE folder inside your System Folder, select DAE, and choose Get Info from the Finder's File menu.
6. Enter the desired amount of memory *above the minimum requirement* in the Preferred Size field. For example, if the Preferred Size currently says "8000k" and you wish to allocate an additional 2 megabytes of memory (1 megabyte equals 1000 kilobytes), then you should enter "10000" into the Preferred Size field. Do not change the number in the Minimum Size field.
7. Close the Get Info dialog. The next time you start Pro Tools, DAE will use this new memory allocation.



Allocating additional memory to DAE

Creating Sessions



Chapter 3

Creating Sessions

Introduction

This chapter covers some of the basics of creating Pro Tools sessions, including how to set up a session, import audio files, use the Mix and Edit windows, and save your projects.

About the Digidesign Audio Engine

When you start Pro Tools, an application called *DAE* automatically launches in the background. DAE, or the *Digidesign Audio Engine*, is Digidesign's real-time operating system for digital recording systems. When you install Pro Tools, DAE is automatically installed in your System Folder.

In the same way that the Macintosh System software provides the foundation for programs that run on the Macintosh, DAE provides much of the hard disk recording, digital signal processing, mix automation, and MIDI functionality required by Pro Tools and other products from Digidesign and its Development Partners. Because DAE is an application itself, it supplies these capabilities to any software (such as Cubase Audio™, Digital Performer™, Logic Audio™, or StudioVision™) which utilize Digidesign DSP cards to record and play digital audio.

DAE allows such programs to run on virtually any Digidesign card or even on a Power Macintosh without Digidesign hardware. A Macintosh digital audio sequencing program can run on a Pro Tools d24 card, Pro Tools III Disk I/O, Pro Tools Project or Audiomedia III card installed in your computer.

Starting Up and Shutting Down Your System

Your Pro Tools system consists of several components that have to be turned on and off individually: your Audio Interface(s), your computer, and your external hard drive(s). In order for all of these devices to communicate properly, it's important that you start up and shut down your system in a specific order.

Start your Pro Tools System in this order:

1. Turn on your external hard drives first. Wait 10-15 seconds for them to come up to speed.
2. If you plan to work with MIDI equipment, turn on your MIDI interface and other MIDI devices.
3. Turn on your Pro Tools Audio Interface(s).
4. Turn on your Macintosh.

Shut down your Pro Tools System in this order:

1. Turn off your Audio Interface(s).
2. Turn off your Macintosh.
3. If you're using MIDI equipment, turn off your MIDI interface and controllers.
4. Turn off your external hard drives.

If you launch Pro Tools without turning on your Audio Interface, it will prompt you to turn it on. When you do this, allow about ten seconds for your Audio Interface to complete its power-up cycle before clicking OK.

File Management in Pro Tools Sessions

The various Pro Tools systems require that you keep certain files on specific hard drives in order for these systems to function properly. Observe the following file management rules:

- On all Pro Tools Systems, the Pro Tools software should reside on your Start-up drive (the drive that contains your System folder and other System-related files).
- Pro Tools 24 data files (such as session files, audio files and fade files) can be located on any valid Pro Tools 24 drive. A "valid" Pro Tools 24 drive can be a compatible drive connected to the internal SCSI bus or the external SCSI bus of your computer, or to a SCSI accelerator card in your computer. Refer to the *Connecting Hard Drives* chapter in the *Pro Tools Installation Guide* for details.
- Pro Tools III and Pro Tools Project system data files (such as session files, audio files and fade files) must be located on a compatible SCSI drive which is connected to either your Disk I/O card (Pro Tools III), to your Pro Tools Project card (Pro Tools Project), or to your computer's SCSI chain.
- Pro Tools Audiomedia and Pro Tools PowerMix data files can be located on any compatible hard drive connected to your computer's internal or external SCSI bus.

DAE PowerMix: Using Pro Tools Software without Digidesign Hardware

If you own a Power Macintosh, you have the option of running Pro Tools without Digidesign cards or an Audio Interface by using the DAE PowerMix™ extension included on your Installer disks.

If you use the PowerMix option, you are limited to the built-in audio input and output capabilities of your Power Macintosh. In addition, the features of a TDM or Project system, such as TDM Plug-Ins and sends/returns, are not available in this mode. However, this capability will allow you to create a setup without audio hardware, which can be convenient for applications such as editing.

Refer to Appendix A of the *Pro Tools Reference Guide* for details on track count with DAE PowerMix.

In order to use Pro Tools PowerMix, your Power Macintosh must have at least 48 megabytes of RAM.

Selecting PowerMix as Your Playback Engine

Pro Tools automatically defaults to using your installed audio card(s) as its Playback Engine each time you launch Pro Tools software or open a session. If you wish to use PowerMix instead, you must specifically select it in the Playback Engine dialog. You can either do this as you launch Pro Tools, or after Pro Tools is already open.

To select PowerMix as your Playback Engine if Pro Tools is NOT currently open:

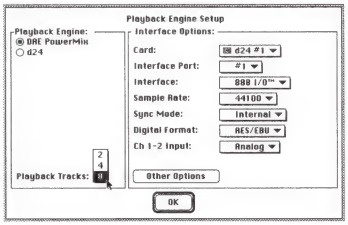
1. Open the DAE Folder inside your System Folder and double-click the DAE application.
2. From DAE's File menu, choose Set Playback Buffer Size and set it to "2," "4," or "8," depending on how

many playback tracks (voices) you want in your session. A minimum allocation of "2" is required, and will provide up to up to 4 voices of playback. An allocation of "4" will provide 12-16 voices of playback depending on the speed of your CPU and hard drive. An allocation of "8" will provide improved performance. Make sure your Macintosh has enough RAM to accommodate the setting you choose. (If you later stop using PowerMix and wish to revert to your audio card as the Playback Engine, we recommend that you reset the playback buffer size to "0" or "2".)

3. Quit DAE.
4. Hold down the "n" key on your computer keyboard and double-click the Pro Tools application. As Pro Tools opens, the Playback Engine dialog appears.
5. In the Playback Engine portion of this dialog, choose DAE PowerMix.
6. Click the # Playback Tracks pop-up at the bottom of this dialog and choose the number of playback tracks (voices) you would like in your session. Choose the smallest number of playback tracks that you actually need, since this will affect system performance. The number of playback tracks allowed depends on the processor speed of your Power Macintosh (and the amount of memory you allocated with DAE's Set Playback Buffer Size command).
7. Click OK. Pro Tools opens using the PowerMix engine to power your session.

To switch to PowerMix if Pro Tools is ALREADY open:

1. Use the Applications menu to switch to DAE.
2. Choose Set Playback Buffer Size From DAE's File menu. If DAE's playback buffer is already set for the number of playback tracks you desire, you can skip the next step.
3. If DAE's playback buffer is set to "0" go back to Pro Tools, quit the application, then refer to the instructions in the section immediately preceding this for selecting PowerMix as your Playback Engine when Pro Tools is not currently open.
4. From the Pro Tools Setups menu, choose Playback Engine. If a session is currently open, Pro Tools will prompt you to save it. The Playback Engine dialog then appears.



The Playback Engine dialog

5. In the Playback Engine portion of this dialog, choose DAE PowerMix.
6. Click the # Playback Tracks pop-up at the bottom of this dialog and choose the number of playback tracks you would like in your session.
7. Click OK to close this dialog. Pro Tools will now use the PowerMix engine to power your session. (TDM capabilities and input/output through Digidesign hardware (if any) are not available in this mode.)

Preparing Your System

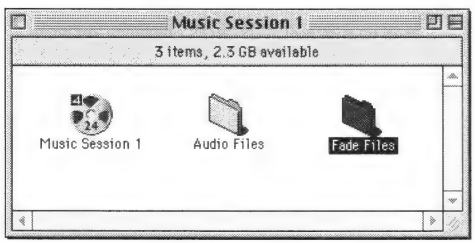
The first time you use Pro Tools, you must set several parameters of your system so that they match your studio setup. At this point, you should have installed your Pro Tools hardware and software, and configured your system using the Hardware command in the Pro Tools Setups menu. You should also have installed the demo files included with your Pro Tools system and confirmed that your system was working properly.

If you haven't configured Pro Tools already, you'll need to do so the first time you use your system, and also whenever you wish to change the settings of your Audio Interface(s), such as the input format (analog or digital), sample rate, sync mode, and other parameters.

Please refer to your Pro Tools *System Installation Guide* for complete instructions on how to install and configure your Pro Tools system.

Creating a New Session

The first step in beginning a Pro Tools project is creating a new session. When you do so, Pro Tools automatically creates a new folder named after your session. Within this folder is the session file itself, and two other folders: an Audio Files folder, and a Fade Files folder. The Audio Files folder contains all audio recorded during the session. The Fade Files folder contains any cross-faded audio data generated by the session (refer to the *Editing* chapter of the *Pro Tools Reference Guide* for information on creating fades).

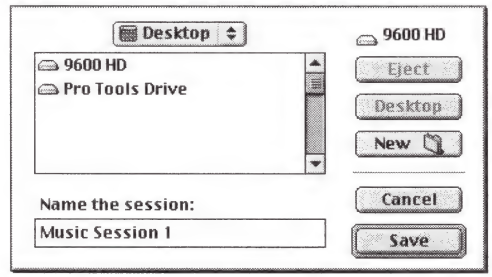


A typical Session folder

When you record a new audio track, the track is saved as a new audio file and automatically placed in the Audio Files folder. At any time in a session, you also have the ability to import other existing audio files into the session, and work with them as well.

To create a new session:

1. Choose New Session from the File menu. A dialog appears asking you to name the session.



The New Session dialog

2. In this dialog, choose the drive on which you wish to create the session. On Pro Tools III and Pro Tools Project systems, sessions can only be created on hard drives that are connected to your Pro Tools Disk I/O SCSI chain or to your Pro Tools Project card. All other systems allow you to create your sessions on any mounted SCSI disk on your computer.
3. (Pro Tools 24 only) Choose the bit depth of your session.

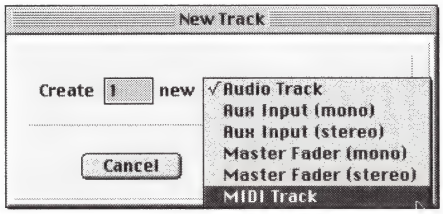
(Pro Tools 24 only) When selecting a bit depth for your session, remember to consider the disk space and DSP mixing power your selection will require. It is not possible to combine different bit depths within a single session.

4. Enter a name for the session and click OK.

To create new tracks for your session:

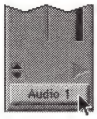
1. Choose New Track from the File menu.
2. In the New Track dialog, choose the type of track you wish to create from the pop-up menu. (Only those track types supported by the current Playback Engine will appear.)

3. Enter the number of new tracks you want to create, and click OK.



Creating a new track

4. If you wish to give names to your tracks, double-click the Track Name button at the bottom of each track in the Mix window. In the dialog that appears, enter a name and click OK. This name will also be given to any audio files that you record on the track.



Double-clicking a track name in the Mix window

New Track Dialog Keyboard Shortcuts:

- Command- up/down arrow chooses previous/next track type in pop-up menu

Displaying track controls

To conserve space on screen, Pro Tools allows you to show or hide the controls for input/outputs, inserts, and sends on your tracks (sends are only available on Pro Tools 24, Pro Tools III, and Pro Tools Project systems). If you choose to show these, you can do so in the Mix and/or Edit window.

To show inserts, sends, and I/O controls on your tracks:

- To show these controls in the Mix window, choose Mix Window Shows from the Display menu and choose the desired item(s) in the submenu. If you wish to show all of these controls, choose All.
- To show these controls in the Edit window, choose Edit Window Shows from the Display menu and choose the desired item(s) from the submenu. If you wish to show all of these controls, choose All.

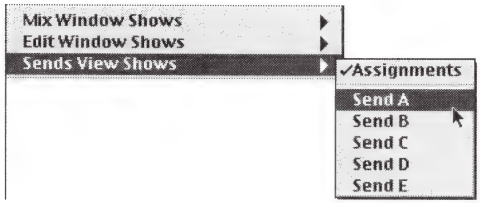
Displaying I/Os, inserts, and sends views

Each Pro Tools track/channel strip has at least two unity-gain, pre-fader, in-line inserts. (Master Fader channels are post-fader only). Inserts are available via the pop-up menu in the inserts section of a track.
Pro Tools 24 and Pro Tools III inserts can be used to patch Plug-Ins into your signal path. On other Pro Tools systems, these inserts provide EQ to each channel. Inserts are covered in greater detail in the *Mixing* chapter of the *Pro Tools Reference Guide*.

Pro Tools 24 and Pro Tools III sends are signal busses that allow you to send a track's mono or stereo signal to an external signal processor or any of your system's 32 internal busses. Sends are selectable for either pre- or post-fader operation. You can choose to show all the send assignments for your tracks, or you can show the level, mute, pre/post and (in the case of stereo sends) pan controls for individual sends.

To show the controls for individual sends on your tracks:

Choose Sends View Shows from the Display menu and choose the send you wish to display from the submenu. To show all send assignments for your tracks, choose Assignments from the submenu.



Displaying controls for a send

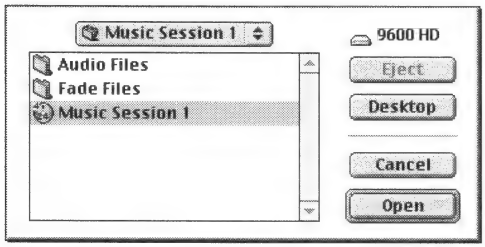
Sends and returns are covered in greater detail in the *Mixing* chapter of the *Pro Tools Reference Guide*.

Opening an Existing Session

If you wish to work on a session that you created previously, you can open it with the Open Session command. The session will open in exactly the same state that you saved it, with all settings and audio files intact.

To open an existing session:

1. Choose Open Session from the File menu.



The Open Session dialog

2. Locate the session you want to open and click Open. All audio, MIDI tracks and regions saved with the session appear. You can now resume work on the session.

NOTE: (Pro Tools 24 only) If you are not currently using a 24-bit capable Playback Engine and attempt to open a 24-bit session, Pro Tools will give you the option of selecting a 24-bit capable Playback Engine if one is available.

Loading Previously Recorded Audio Files into a Session

You can import previously-recorded Pro Tools audio files, or files in other audio formats into a session and work with them in addition to your current tracks. The Pro Tools native audio format is *Sound Designer II mono*. In order to import audio files in other formats, Pro Tools must first convert them (requiring time), and then save them to disk (requiring disk space). A particular Pro Tools session must contain audio files of the same bit depth, for example, all 24-bit, or all 16-bit. (Only Pro Tools 24 will support 24-bit sessions.) The Convert and Import dialog can be used to import audio in a wide variety of industry-standard formats.

You can import audio files in three different ways:

- With the Import Audio/Track command in the File menu (Sound Designer II format).
- With the Import Audio command in the Audio Regions List pop-up menu (Sound Designer II format).
- With the Convert and Import Audio command in the Audio Regions List pop-up menu (other formats, bit depths and sample rates).

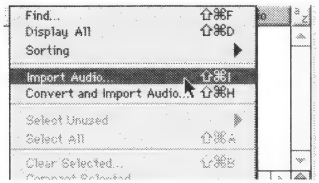
Using the Import Audio/Track command

If you choose the Import Audio/Track command from the File menu, Pro Tools will automatically create a new track for each file (in Sound Designer II format) that you select and place the file(s) into the new track(s) for you.

Using the Import Audio Command

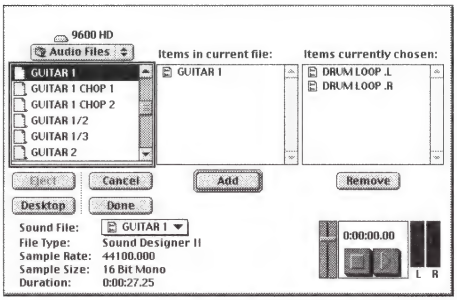
Alternatively, if you choose the Import Audio command from the Regions List pop-up menu (in the Edit window), Pro Tools will import the audio file (in Sound

Designer II format) into the Regions List only. From there, you can drag it onto a track.



The Import Audio command (Audio Regions List pop-up)

Each of these techniques uses the Import Audio dialog, below:



The Import Audio dialog

The Import Audio dialog lets you select both audio *files* (the whole recording) and audio *regions* (if the selected file contains any) and load them into the current session. In the center and right scroll boxes you'll notice two types of icons which appear next to an item's name. These icons indicate whether the item is an audio file or an audio region. The icon that looks like a page with two small waveforms on it identifies an audio file. The icon that looks like a single highlighted waveform identifies an audio region.

In the Import Audio dialog, when you click on an audio file's name, information appears about the sample rate, resolution, length, and format of the file. The dialog also allows you to audition a region to make sure it's exactly what you want before you load it into a session.

Only Sound Designer II and AIFF file types will appear in the Import Audio dialog. If you wish to use other sound file formats in your session, you must first use the Pro Tools Convert and Import dialog to convert them to SD II or AIFF format.

In the Import Audio Dialog, the left scroll box is a file directory that lists the audio files on the selected hard drive. In the example above, the directory shows that the folder Audio Files on the hard drive "Pro Tools Drive" contains six files, and the file Drums is currently selected.

The center scroll box lists all the regions associated with the currently selected audio file (in other words, the regions which have been created from the original source file, Drums). In the above example, the regions *Drums crash*, *Drums dbl kick*, *Drums kick*, *Drums loop*, and *Drums snare* are shown because they are regions associated with the file *Drums*. The item at the top of the list which bears the name of the original audio file represents the "Whole Sound file region"—the entire source file. Loading this will load the entire source file into the session.

The right scroll box lists the regions that you have selected to load into the session.

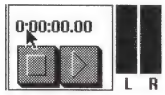
When working with Pro Tools III and Pro Tools Project systems, the Import Audio dialog will only recognize drives that are connected to your Disk I/O card's SCSI bus. Volumes (drives) connected to the Macintosh SCSI bus (or networked volumes) will not appear. You can access these volumes by using the Convert and Import dialog.

Auditioning Files in the Import Audio Dialog

The Play and Stop buttons at the lower right of the Import Audio dialog let you audition the selected region/sound file. Click the Play button to audition the currently selected file. The counter immediately above Play/Stop serves two purposes: it provides a time dis-

play for the file being auditioned, and it also lets you fast forward/rewind the file. The volume slider allows you to adjust the output level when auditioning the file.

To use the counter to fast forward to the beginning of the file, click on the counter close to the hours value (the leftmost digits) as shown below:



Using the Import Audio dialog's counter to fast forward

To fast forward to the middle or end of the file, click on the counter nearest the minutes:seconds values (the middle of the display) or the rightmost values of the counter, respectively.

Import Audio Dialog Keyboard Shortcuts:

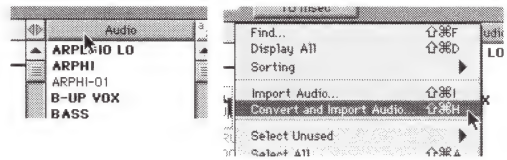
- Enter or Return key adds the currently selected audio file/region to list.
- Command-P auditions the currently selected audio file/region.
- Command-S stops audition (playback) of currently selected audio file/region.
- Tab key tabs between file windows.
- Command-W chooses Done and closes the dialog.
- Command-period cancels and closes the dialog.

To load audio files/regions into a session:

1. Select Import Audio/Track from the File menu or Import Audio from the Audio Regions List pop-up. The Import Audio dialog appears.
2. Locate the desired audio file and click its name in the list on the left.
3. Click on the file or region you want to import and click Add. (Double-clicking a region's name will achieve the same result.) If you want to audition the region before you load it, click the Play button at the bottom of the screen. To add additional regions from the same audio file, double-click their names to load them as well. To remove an item from the list of Items currently chosen, select it and click the Remove button.
4. When you have finished, click Done. The regions that you have added will appear in the Audio Regions List (and in new tracks if you choose the Import Audio/Track command from the File menu).

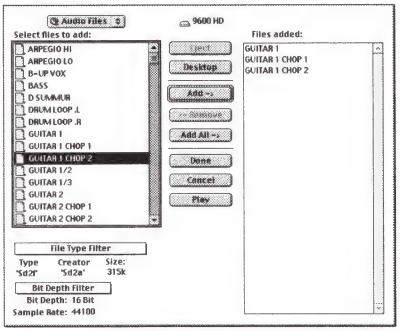
Using the Convert and Import Audio Command

The Convert and Import Audio command in the Audio Regions List pop-up menu (in the Edit window) differs from the previous two in that it allows you to convert and import audio files that are in formats *other than* the Pro Tools native Sound Designer II mono or AIFF formats. Note that this command copies the imported files to your Audio Files folder.



Choosing the Convert and Import Audio Command

This command also allows you to import audio files of different sample rates (and in the case of Pro Tools 24, of different bit depths as well). In addition, if you are using a Pro Tools III or Pro Tools Project system, this command allows you to audition, convert and import files residing on hard drives that are not attached to your Pro Tools Disk I/O SCSI chain or your Pro Tools Project card (including networked volumes such as file servers).



The Convert and Import Audio dialog

Using this command, you can convert files in Sound Designer II stereo, AIFF, .WAV, and SND (Macintosh system sound resource) formats.

This dialog allows you to view only files of a particular type or bit depth in the Select Files to Add list. When you add a file, Pro Tools will convert the file to the current session's format and the current session sample rate, save the file to disk, and then add it to the Audio Regions List.

The quality of sample rate conversion that Pro Tools applies to a file when converting and importing it is determined by the Conversion Quality setting in the Editing page of the Preferences dialog. For more information about the Conversion Quality parameter, refer to the *Pro Tools Menus* chapter of the *Pro Tools Reference Guide*. This feature is covered in the explanation of the Preferences command (in the Setups menu).

To convert and import audio into a session:

1. From the Audio Regions List pop-up menu (in the Edit window), select the Convert and Import Audio command.
2. In the dialog box that appears, choose the file types and bit depths you wish to view from the pop-up menus, and locate the desired audio file(s).
3. Click the file you wish to import and click Add. To add additional regions from the same audio file, double-click their names to load them as well. To remove an item from the list of items currently chosen, select it and click the Remove button.
4. When you have finished, click Done.
5. Specify a destination drive for the new files. Pro Tools III and Project users must save the files on a hard drive connected to the Disk I/O or external SCSI chain.
6. Pro Tools will convert the selected audio files to the current session's formats and save them to the chosen destination hard drive. When conversion is complete, the files will appear in the Audio Regions List.

Convert and Import Audio Dialog Shortcuts:

- Add = Command-A
- Remove = Command-R
- Add All = Command-Option-A
- Done = Command-W
- Cancel = Command-period
- Play/Stop = Spacebar

Batch Loading Audio Files into an Open Session

Pro Tools provides you with a convenient way to "batch" load several audio files at once into an open session using the MacOS "drag-and-drop" capability. Simply go to the Finder and locate the files you wish to load into the session, and drag them onto the Pro Tools application icon. The files will be loaded into the Audio Regions List for you. The files can be either mono or stereo format files. If a file is in interleaved stereo format, Pro Tools will convert it to two mono Sound Designer II files before importing it. The audio files must all be of the same bit depth as the current session.

The newly-converted files will appear in the Audio Files folder of the current session.

To batch load several audio files at once into an open session:

1. Open the desired Pro Tools session.
2. Go to the Finder and select the audio files you wish to load into the session. The files can be either mono or stereo format files.
3. Drag the selected files onto the Pro Tools application icon. The files are automatically loaded into the Audio Regions List for you.

If You Wish to Reuse Audio Files/Regions in Other Sessions

Pro Tools keeps an audio file's region definitions inside the session file itself. This means that if you want to use an audio file—complete with its regions—in other sessions or other applications that recognize Pro Tools regions, you will need to use the Export Region Definitions command (in the Audio Regions List pop-up menu) to make the region definitions readable by other sessions. The Export Region Definitions command is explained in more detail in the Editing chapter of the Pro Tools Reference Guide.

Track Transfer™ Utility Software

Track Transfer utility software (included with your Pro Tools system) greatly simplifies the process of transferring your work between different sessions. This convenient program lets you import, export, or merge entire track entities (including region definitions) into other sessions.

Saving a Session

Saving regularly throughout your session ensures that your work is preserved safely on your hard disk. Cultivate the habit of saving your work throughout your session. To speed up the process of saving Pro Tools sessions, reduce you computer's Disk Cache Size. (This is especially useful when saving during playback.

To reduce the size of your computer's disk cache:

Open the Memory Control panel, and in the Disk Cache section, reduce the cache size by clicking the Down arrow or entering a new value. A value of 96K works well for most Pro Tools sessions.

Save Session

The Save Session command saves the changes you have made to your session and writes them over the previously saved version of the file. The Save Session command cannot be undone.

To save a session:

Choose Save Session from the File menu. Remember that for Pro Tools III and Pro Tools Project systems, sessions and their associated audio files must be saved to a drive connected to your Disk I/O or Pro Tools Project card.

Save Session As

The Save Session As command is useful for saving a copy of the current session under a different name, or in a different hard disk location. Because the Save Session As command closes the current session and lets you keep working on the renamed copy, it's particularly useful if you are experimenting and want to save successive stages of your session. This way, you can save each major step under a different name such as "FX session 1.0," "FX session 1.1," and so on.

By working this way, you'll always have the option of retracing your steps should you want or need to go back to an earlier version. Keep in mind that by using the Save Session As command you are saving a new version of the *session file* only—not duplicate versions of the audio or Fade files.

To Save a Session under another name:

1. Choose Save Session As from the File menu.
2. Choose the destination and type in a new name for your session. Remember that for Pro Tools III and Pro Tools Project systems, sessions and their associated audio files must be saved to a drive connected to the Disk I/O or Pro Tools Project card.
3. Click Save to save the session under another name.

When you use the Pro Tools Save Session As command, a new "parent folder" with the new session name is not created for your renamed session document. The renamed session document is merely placed into the existing session folder along with the original session. Any new audio files that you record in your renamed session will be placed into the same Audio Files folder that was created for your original session.

If you wish to keep your audio files for different sessions organized in separate folders, you should use the New command in the File menu to create a new session. If you wish to maintain a specific layout (channel strips, routings, Plug-Ins, etc.) that you have created with an existing session, you can create a Session Template of your original session. For more information, see the section *Creating a Custom Session Template* later in this chapter.

Save Session Copy In

The Pro Tools Save Session Copy In command is used to save a copy of the currently selected session document under a different name, in a different hard disk location, or at a different bit-depth (such as saving a 16-bit version of a 24-bit session).

This command also gives you several options for copying a session along with its associated files.

Copy Audio Files & Session Plug-In Settings Folder When this option is selected, all audio files and the session's Plug-In Settings Folder are copied to the new location. The references to these Plug-In settings in the session are redirected to point to the copied files.

Copy Root Plug-In Settings Folder When this option is selected, the contents of the root-level Plug-In Settings Folder are copied into a folder named *Place in Root Settings Folder*, indicating that these files will need to be moved to the root level Plug-In settings folder on the destination machine before you can use them. The references to these settings files in the session are *not* redirected to point to the copied files.

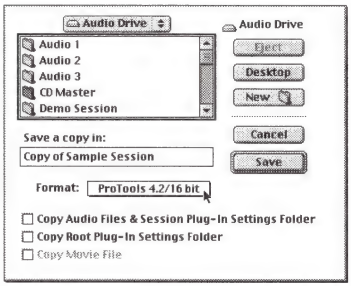
Copy Movie File When this option is selected, a session's movie file is copied to the new location, and the references in the session to the movie are redirected to point to the copied movie file.

Unlike the Save Session As command, Save Session Copy In does not close the original session, so subsequent edits are made to the original session. Having a backup copy gives you the option of reverting to the earlier version.

This command provides the option of saving the current session in Pro Tools 3.2 format for compatibility with older systems. Be aware that by saving in 3.2 format you will lose any Plug-In automation, as well as mix and edit groups, and other data (such as memory location attributes) from the original session, since these are not supported by Pro Tools 3.2.

To save a session in a different location:

1. Choose Save Session Copy In from the File menu.



The Save Session Copy In dialog

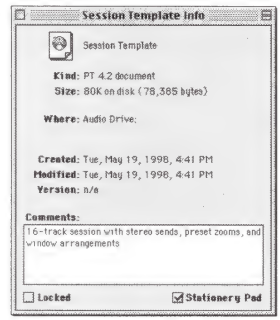
2. Select a destination for the file and name the session. Remember that for Pro Tools III and Pro Tools Project systems, sessions and their associated audio files must be saved to a drive connected to the Disk I/O SCSI chain or to the Pro Tools Project card.
3. Choose the format and bit depth for the session copy by selecting it from the Format pop-up.
4. If you wish to copy a session along with all of its associated files, select from the available options at the bottom of this dialog.
5. Click Save to save the session in the new location.

Creating a Custom Session Template

Pro Tools allows you to create custom session documents that are pre-configured to the track setups, mixer setups, window arrangements, and zoom level memory locations that you use most frequently. Doing this will save you the trouble of having to create your studio setup from scratch every time you start a new session. You can accomplish this by saving a session as a *Stationery pad* document. Once a session is saved as Stationery, its settings act as a template that you can open and then resave as a normal session.

To create a custom session template:

1. Create a session and arrange the Mix, Edit, and Transport windows as you like. You can choose which windows are open and where they appear on the screen. You can also define the parameters within these windows, such as signal routings, inserts and sends configurations, track views, and Preferences settings.
2. Choose Save Session from the File menu.
3. Name the session and click Save.
4. Close the session.
5. Go to the Finder and locate the session file that you just saved.
6. Click once on the file to select it.
7. From the Finder Edit menu, choose Get Info. A file information window appears.
8. Click the Stationery pad check box to save the file as a template, then close the information window.


Session Template Info
Session Template
Kind: PT 4.2 document
Size: 80K on disk (78,385 bytes)
Where: Audio Drive:
Created: Tue, May 19, 1998, 4:41 PM
Modified: Tue, May 19, 1998, 4:41 PM
Version: n/a
Comments:
16-track session with stereo sends, preset zooms, and window arrangements
Locked
Stationery Pad

Saving a session as a template using Stationery pad

This document will now act as a template, with your settings just as you configured them. To use this template, simply double-click it in the Finder, or open it with the Open Session command if you are already running Pro Tools. You can create several custom setups like this for studio setups that you frequently use.

When you open a session saved as a Stationery pad, Pro Tools offers you the choice of editing the template or starting a new session using the template settings. If you choose New Session, Pro Tools will create a new folder containing your session template and Audio and Fades folders.

Closing a Session

Because Pro Tools allows you to work on just one session at a time, you must close the current session if you want to work on another. The Close Session command closes your current Pro Tools session but leaves the

Pro Tools application open. Although Pro Tools will warn you before allowing you to close without saving changes, you will probably want to save your work using the Save Session or Save Session As command before closing the current session.

To close a session:

Choose Close Session from the File menu (or click the close box at the upper left corner of the Pro Tools window).

If you have made any changes to your session since the last time you saved, Pro Tools will ask you if you want to save them.

Quitting a Session

When you are ready to end your Pro Tools session, the Quit command will quit Pro Tools and return you to the Finder. Although Pro Tools will warn you before allowing you to quit without saving changes, you will probably want save your work before quitting.

To Quit a Session:

Choose Quit from the File menu.

If you have made any changes to your session since the last time you saved, Pro Tools will ask you if you want to save them.

Understanding the Mix and Edit Windows

Pro Tools provides virtually all of the recording, editing, and mixing capabilities that you could need in a professional recording facility. It provides two complementary ways to view your project: the Mix window offers a highly flexible mixer and the Edit window features a versatile graphical editing environment. Each allows full access to the recording, mixing, and automation capabilities of Pro Tools.

The Mix Window

The Mix window provides a mixer-like environment for recording and mixing audio and MIDI. Here, tracks appear as mixer modules, each with controls for inserts, effects sends, input/output assignments, volume, panning (in Stereo Mix mode), record-enable, automation mode, and solo/mute. The following section explains each of these track controls.

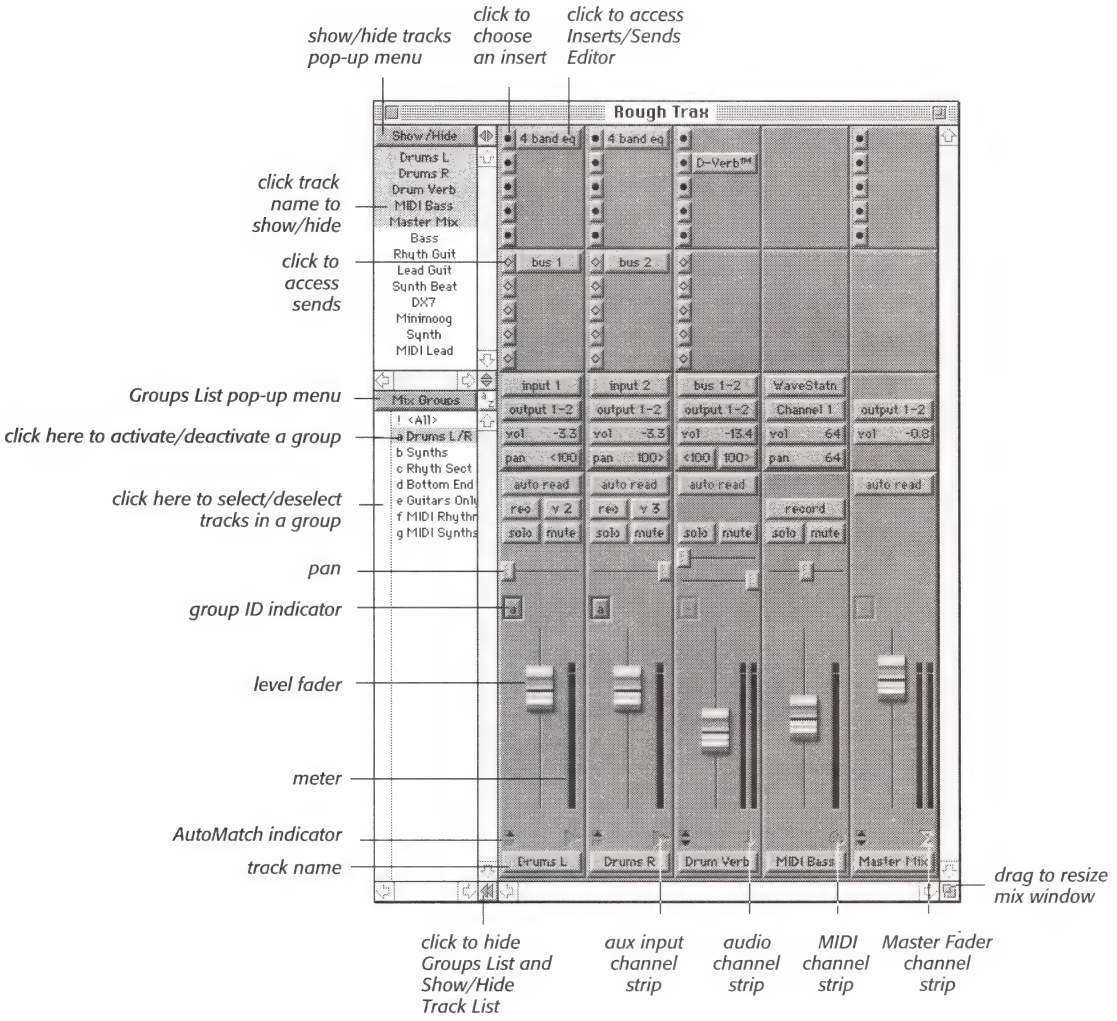
Before you begin, if you haven't already done so, choose the Mix Window Shows command from the Display menu and choose All to display the Pro Tools input/output controls, inserts, and sends.

By pressing Command-= (equals sign), you can quickly toggle between the Mix and Edit windows.

The Show/Hide Tracks List

This scrolling window lists all tracks in the current session. It allows you to show or hide a track by selecting or deselecting its name in its list. To show a track, click to highlight its name. To hide a track, deselect its name. You can also use this list to reorder tracks on screen by dragging the desired track name to a new position within the list. The pop-up menu at the top of this list

Pro Tools TDM Mix Window



provides commands that allow you to show or hide all tracks, or only tracks currently selected on screen.

About Groups and Show/Hide Tracks

Be aware that even if a track is hidden, if it is a member of an enabled group, all Mix window operations performed on other members of the group *will also affect the hidden track*—with the exception of audio or MIDI record-enabling. In other words, if you solo, mute, or automation-record enable a grouped track, any group members that are hidden will be soloed, muted, or automation-record enabled too. The only exception to this rule is for audio or MIDI recording enabling. These functions are not applied to hidden tracks in the Mix window.

In the Edit window, however, editing operations performed on members of an enabled group will *not* affect hidden tracks that are also members of the enabled group.

Also be aware that even if a track is hidden from view, its position relative to other tracks still affects its virtual track playback priority (see the *Working with Tracks* chapter of this guide for details).

Keyboard Shortcuts

- Option-clicking a highlighted track name in this list hides all tracks.
- Option-clicking an unhighlighted track name in this list shows all tracks.
- Command-clicking a highlighted track name in this list toggles that track off and all others on.
- Command-clicking an unhighlighted track name in this list toggles that track on and all others off.
- Control-clicking a group name in the Groups List shows or hides members of that group.

The Groups List

This lists all audio track groups that you have created in the current session. It allows you to activate or deactivate a particular group by selecting or deselecting its name here. To activate a group, click to highlight its name. To deactivate a group, deselect its name. A group is only *enabled* (meaning that its members are linked for editing or mixing purposes), when its name is highlighted in this list.

You can also use this list to select grouped tracks on-screen by clicking to the left of the dotted vertical line next to a group name. The pop-up menu at the top of this list provides commands to create, delete or suspend groups. For more information on grouping, refer to the *Working with Tracks* chapter of this guide.

Keyboard Shortcuts

- Option-clicking a highlighted group name in this list activates all groups
- Option-clicking an unhighlighted track name in this list deactivates all groups
- Command-clicking a highlighted group name in this list toggles that group off and all others on

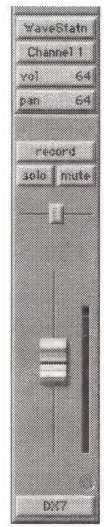
- Command-clicking an unhighlighted group name in this list toggles that group on and all others off
- Create New Edit/Mix Group: Command-G
- Suspend/Resume Groups: Command-Shift-G or Command-clicking on Groups pop-up menu
- To rename a group, double-click on the Group ID indicator in the Groups List
- Group Enable/Disable: type Group ID letters on the keyboard
- To show only tracks in a specific group: Control-click on a group name in the Groups List. Control-Shift-click for multiple groups
- To suspend all groups: Control-click on the Groups pop-up menu.

An Audio Track/Channel Strip

Each audio track has its own set of controls for volume, panning (if you are in Stereo Mix mode), voice assignment, record-enable, automation mode, and solo/mute. Inserts are available for each track and are displayed via the Mix Window Shows command in the Display menu. In Pro Tools III and Pro Tools 24, five sends per track are available as well, via the same command. Pro Tools Project systems provide two sends per track.

Tracks can be added to a session with the New Track command. If you need to streamline your on-screen track display, tracks can removed with the Delete Selected Tracks command, or hidden from view with the Show/Hide Tracks List.

The meters on audio tracks show input levels when they are record-enabled, and show disk playback levels during playback. The Pro Tools volume faders only adjust the monitoring level of a track—not the recording input gain. In order to increase the input signal level you must adjust the level of the actual signal *before* it reaches the Audio Interface. You can do this by pre-amplifying it through a quality mixing board or dedicated preamp.



A MIDI Track/Channel Strip

Each MIDI track has its own set of controls for Record-enable, solo/mute, volume, panning, MIDI port assignment, and MIDI channel assignment. MIDI tracks can be added to a session with the New Track command, removed with the Delete Selected Tracks command, or hidden from view with the Show/Hide Tracks List. The meters on MIDI tracks indicate MIDI Velocity levels.

Record Enable Button

Clicking the *record enable* button puts the selected track into record-ready mode. On audio tracks, there is an input selector button that allows you to route one of the Audio Interface's inputs to the track. Once a track is record-enabled, clicking the Transport's Record and Play buttons will initiate audio or MIDI recording.

Pro Tools allows you to specify latch operation of the record enable button in the Operation page of the Preferences dialog. When the Latch Record Enable Buttons option is selected, you can record-enable more than one track at the same time simply by clicking the record-enable button on each of the desired tracks. If the Latch Record Enable Buttons option is deselected

(meaning the buttons are "unlatched"), hold the Shift key to record-enable multiple tracks.

Record Safe Mode

Pro Tools provides a *record safe* mode which allows you to disable recording capability on any track in a session. This feature helps prevent you from inadvertently record-enabling a track and then recording over valuable audio material. To put a track into record safe mode, hold down the Command key and click the Record button on the desired track. The Record button is grayed out. You will not be able to record on the track until you take it out of record safe mode. To take the track out of record safe mode, Command-click the Record button a second time.

Refer to the *Recording* chapter of the *Pro Tools Reference Guide* for more information on recording.

Keyboard Shortcuts

- Option-clicking on a record-enable button enables *all* visible tracks for recording.
- Option-Shift clicking on a record-enable button enables *all currently selected* visible tracks for recording.
- Command-clicking on a record-enable button puts the track into record safe mode.
- Command-Option-clicking on a record-enable button puts *all* tracks into record safe mode.
- Command-Option-Shift-clicking on a record-enable button puts *all currently selected* tracks into record safe mode.

Automation Mode Selector

This button allows you to choose a track's automation mode. Pro Tools has five automation modes: Off, Read, Touch, Latch, and Write. These modes are explained in detail in the *Mixing* chapter of the *Pro Tools Reference Guide*. Once a track is automation record-enabled, clicking the Transport's Play button will initiate automation recording (depending on the mode you have chosen). Any automation moves that you make on the selected track will then be recorded and played back exactly as you performed them.

Keyboard Shortcuts

- Option-clicking on the automation mode button sets *all* tracks to the selected automation mode.
- Option-Shift clicking on the automation mode button sets *all currently selected* tracks (including any that are hidden) to that automation mode.

Solo Button

The *solo* button mutes all other tracks so the selected track can be auditioned alone.

Pro Tools allows you to specify latch operation of the solo button in the Operation page of the Preferences dialog. When the Latch Solo Buttons option is selected, you can solo more than one track at the same time simply by clicking the solo button on each of the desired tracks. If the Latch Solo Buttons option is deselected (meaning the buttons are "unlatched"), hold the Shift key to solo multiple tracks.

Solo Safe Mode

Pro Tools also allows you to *solo safe* a track by Command-clicking it. This prevents the track from being muted even if you solo other tracks. This feature is very useful for tracks such as auxiliary inputs that are being used as effects returns, since it allows the effects track to remain in a mix even when other tracks are soloed. It is also useful to solo-safe MIDI tracks so that their play-

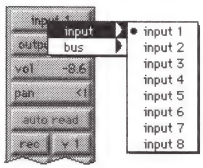
back is not affected when you solo audio tracks. To return a solo safe track to normal, Command-click it a second time.

Mute Button

The *mute* button silences the selected track. More than one track can be muted at one time. If the Mute Frees Voice command is enabled in the Options menu, muting a track will allocate its voice to the next highest priority virtual track allocated to that voice in your session.

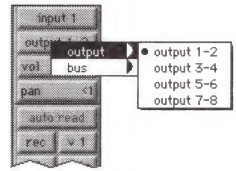
Keyboard Shortcuts

- Option-click any mute/solo button to clear/enable all channel strips
- Option-shift-click any mute/solo button to clear/enable all selected channel strips



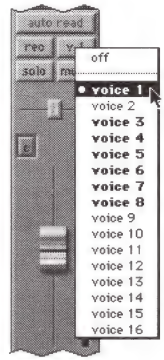
Input Selector

Depending on which Pro Tools system you are using, this button allows you to route any Audio Interface, Audio Card or CPU input, or any of the Pro Tools 24 or Pro Tools III internal TDM busses to an audio track or an auxiliary input. Aux inputs are available only on TDM-capable Pro Tools systems and Pro Tools Project systems. If you are selecting inputs on an auxiliary input track in Stereo Mix Outputs mode, the pop-up menu allows you to route a pair of Audio Interface inputs or a pair of TDM busses to the input.



Output Selector

Depending on the Pro Tools system and Playback Engine, this button allows you to route a track to any Audio Interface, Audio Card, or CPU output, or any of the Pro Tools 24 or Pro Tools III internal TDM busses. In Stereo Mix Outputs mode, the pop-up menu allows you to route the track to a pair of Audio Interface Outputs. In Direct Outputs mode, the pop-up menu allows you to route the track to a single output. In Stereo Mix mode, selecting an output pair and dragging the Pan slider to the left will weight the output toward the odd-numbered channel. Dragging to the right will weight the output towards the even-numbered channel. Zero is the center value.



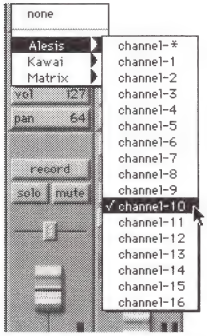
Voice Selector

Clicking this box brings up a pop-up menu in which the selected track can be assigned a "Voice" for audio playback. A 16-channel Pro Tools III system (shown above) provides 16 voices of audio playback, hence the settings Voice 1, Voice 2, Voice 3, and so on. Boldface type in this pop-up indicates that the voice in currently in use. Pro Tools 24 systems provide up to 32 voices of audio

playback. See Appendix A of the *Pro Tools Reference Guide* for more information on voice and track counts.

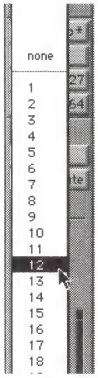
More than one track can be assigned to the same voice, but only one of the tracks can be played back at the same time. Track priority is determined by a track's hierarchical position in the Mix or Edit window. If multiple tracks are assigned to the same voice, the one farthest to the left in the Mix window (or topmost in the Edit window) will be heard.

If there's an empty spot in that track (you'll have to look at the Edit window to determine this), audio on the track with the next highest priority assigned to the same voice will "pop through" during that time. Selecting the Mute Frees Voice command and muting a track will disable playback of that track and allocate its spot to the next virtual track assigned to that voice. Voices and track priority are covered in greater detail in the *Working with Tracks* chapter of this guide.



MIDI Device/Channel Selector

Clicking the top box of a MIDI track presents a pop-up MIDI Device and Channel Selector menu. This menu allows you to route the MIDI track to a desired OMS port destination, or directly to a Digidesign SampleCell card installed in your Macintosh. It also allows you to assign a MIDI channel to the track. The default setting for the channel is "channel -*" which means all regions will retain the MIDI channel assignments they had when they were recorded or imported into Pro Tools. They will then play back on whatever MIDI channel they were assigned to in the original MIDI file.



MIDI Patch Selector

Clicking the second box of a MIDI track brings up a pop-up MIDI Patch Selector menu. This menu allows you to select MIDI patch or program information to the device associated with that track.

NOTE: In order for the Pro Tools software to see a MIDI interface attached to the Macintosh's modem or printer serial port, you must turn on the interface before you start Pro Tools.

Track Level/Headroom Indicator

This indicator shows the current volume/input level of a track as set by the track level fader. Alternatively, if you Command-click this indicator, it will function as a headroom indicator based on the last peak playback level. To reset the peak counter, click the indicator. Values range from +6 dB (highest level signal), to ∞ (no signal). When recording, remember that the audio inputs of your Audio Interface or Audiomedia card offer no built-in pre-amplification, so you will need to increase the source signal's amplitude to increase the input record level. The Track Level slider will not boost a signal's input level.

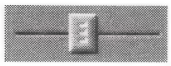
Keyboard Shortcuts

- To toggle between fader-level and headroom indication, Command-click the indicator.
- To reset this indicator, click on it.
- To reset indicators on all tracks, Option-click.

- To reset indicators on all selected tracks, Option-Shift-click.
- To toggle between fader-level indication and headroom indication on all tracks, Command-Option--click.
- To toggle between fader-level indication and headroom indication on all selected tracks, Command-Option-Shift-click.

Pan Indicator

This indicator displays the current pan setting of a track. Pan values range from *<100* (full left) to *100>* (full right). Panning controls are only available if you are using Pro Tools in Stereo Mix mode.



Pan Slider

The Pan slider controls the balance of a track within a given output pair. It only appears if you are using Pro Tools in Stereo Mix mode. The outputs used as the stereo pair for the track's image are set with the Output Selector. The Pan slider on a MIDI track is only effective if you are controlling a sound module that supports MIDI panning (Controller 7). If your original sequence contains MIDI panning changes, that data will override whatever value you set here.

Keyboard Shortcuts

- To center a pan slider, Option-click it.
- Hold down the Command key while dragging this slider for finer resolution.

Track Level Fader

Moving this fader controls the volume of a track when it is in playback, and the monitor level of the track when it is in record.

The level fader on a MIDI track is only effective if you are controlling a sound module that supports MIDI volume (Controller 7). If your original sequence contains MIDI Volume changes, that data will override whatever value you set here.

Keyboard Shortcuts

- To set a level fader to "0" (unity gain), Option-click it.
- To adjust a level fader with much finer control, (increments of 0.1 dB), hold down the Command key while you drag.

Level Meter

Pro Tools meters are plasma-style meters that indicate the level of the signal being recorded or played back from the hard drive. Green indicates nominal levels; Yellow indicates pre-clipping (-6dB below full scale); and Red indicates clipping. When a track is record-enabled, these meters are the Pro Tools record-level indicators. Remember that the Pro Tools system supplies no pre-amplification of the input signal. If your input signal

level is too low, you must increase it before it reaches the audio inputs of your Digidesign system. Digital recording produces the best results when the recorded signal is as high as possible without clipping.

On Pro Tools III and Pro Tools 24 systems, you can globally set level meters to indicate pre-or post-fader levels by selecting/deselecting Pre-Fader Metering from the Options menu. When set to pre-fader, the level meters show disk track levels independent of fader position. With post-fader metering, the level meters respond to fader position.

Pro Tools meters have a convenient clip hold feature that alerts you if you overload your input at any time during recording: the topmost LED will stay lit (red). In addition, they provide a peak hold feature with three options, selectable from the Display page of the Preferences dialog: 3 Second Peak Hold, Infinite Peak Hold, and No Peak Hold. (With the Infinite Peak Hold setting, the meter displays the last peak level until you manually clear it.) You clear a meter's clipping or peak hold indicator by clicking on it. To clear all meters, Option-click.

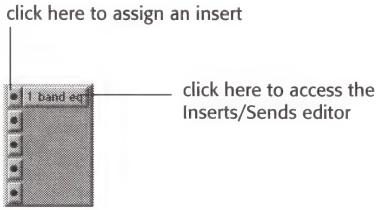
On MIDI tracks, the level meter shows the MIDI velocity of the most recent MIDI event. On Pro Tools 24 and Pro Tools III Master Faders, the meters display the output level and/or input summing/output level, depending on which Mixer Plug-In you are using. Please refer to the *Mixing* chapter of the *Pro Tools Reference Guide* for more information.

Keyboard Shortcuts

- To clear a meter's clipping or peak hold indicator, click on the meter.
- To clear all meters, Option-click.

Track Name

The name of a track appears here. When new tracks are created with the New Track command, they are given a default name which can be changed at any time by double-clicking the track name or using the Rename Selected Tracks command in the File menu.



Inserts Button/Inserts And Sends Editor

Pro Tools provides in-line inserts on each audio track or auxiliary return. The number and type of inserts available to you varies according to the type of Pro Tools system you are using:

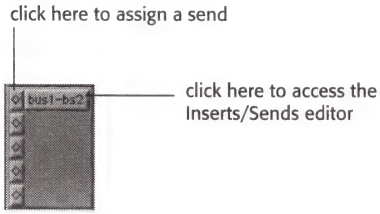
Pro Tools 24 and Pro Tools III systems Pro Tools TDM systems (Pro Tools 24 and Pro Tools III) provide five pre-fader inserts per channel. The inserts can be either *hardware inserts* (using audio interface A/D and D/A), or *software inserts* such as the EQ, Dynamics, and Mod Delay DSP Plug-Ins included with your system. Inserts are accessed via the Inserts button on the inserts section of a track. You can display them in either the Mix or Edit windows by choosing the appropriate option in the Display menu.

Pro Tools Project, Pro Tools with Audiomedia and Pro Tools with DAE PowerMix Each of these systems supports two pre-fader inserts per channel. (Only Pro Tools Project allows you access to hardware inserts.) All of these systems offer a fixed number of DSP-based EQ processing on the inserts (the number of bands of EQ varies between system types). Each insert allows access to a 1-band EQ. Insert parameters can be

adjusted via the Inserts and Sends Editor. The Inserts and Sends Editor is covered in greater detail in the *Mixing* chapter of the *Pro Tools Reference Guide*.

Keyboard Shortcuts

- To set a send to "0" (unity gain), Option-click the slider.
- To adjust a send level with much finer control, (increments of 0.1 dB), hold down the Command key before and while you drag.



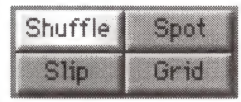
Sends Button/Inserts and Sends Editor

Pro Tools 24 and Pro Tools III provide up to 5 mono or stereo sends per audio track or auxiliary input for sending signals to external signal processors or any of the 32 Pro Tools internal TDM busses. Sends are user-selectable for either pre- or post-fader operation. (Pro Tools Project provides 2 post-fader only sends, and does not provide busses.) These are accessed via the Sends button on the sends section of a track. You can display them by choosing the appropriate options in the Display menu. Send levels can be adjusted via the Inserts and Sends Editor, or directly by showing individual send controls. The Sends View Shows command and the Inserts and Sends Editor are covered in detail in the *Mixing* chapter of the *Pro Tools Reference Guide*.

Effects return routing is assigned by selecting the New Auxiliary Inputs command in the File menu (auxiliary inputs are available in Pro Tools 24, Pro Tools III and Pro Tools Project only), creating a mono or stereo auxiliary input track, and selecting the desired input channels on that track. Returns are covered in greater detail in the *Mixing* chapter of the *Pro Tools Reference Guide*.

The Edit Window

The Edit window provides a time-line display of audio and MIDI for editing and arranging tracks. Here, the tracks appear as graphic waveforms and MIDI data. As in the Mix window, each track has controls for record-enable, automation mode, mute/solo, and so on. Inserts and effects sends, if available on your system, can also be displayed in the Edit window by choosing these options in the Display menu.



The Shuffle/Slip/Spot/Grid Modes

These four modes control how regions can be moved with the Grabber and also how edit commands such as Cut, Paste, Clear, and Duplicate affect the movement of regions.

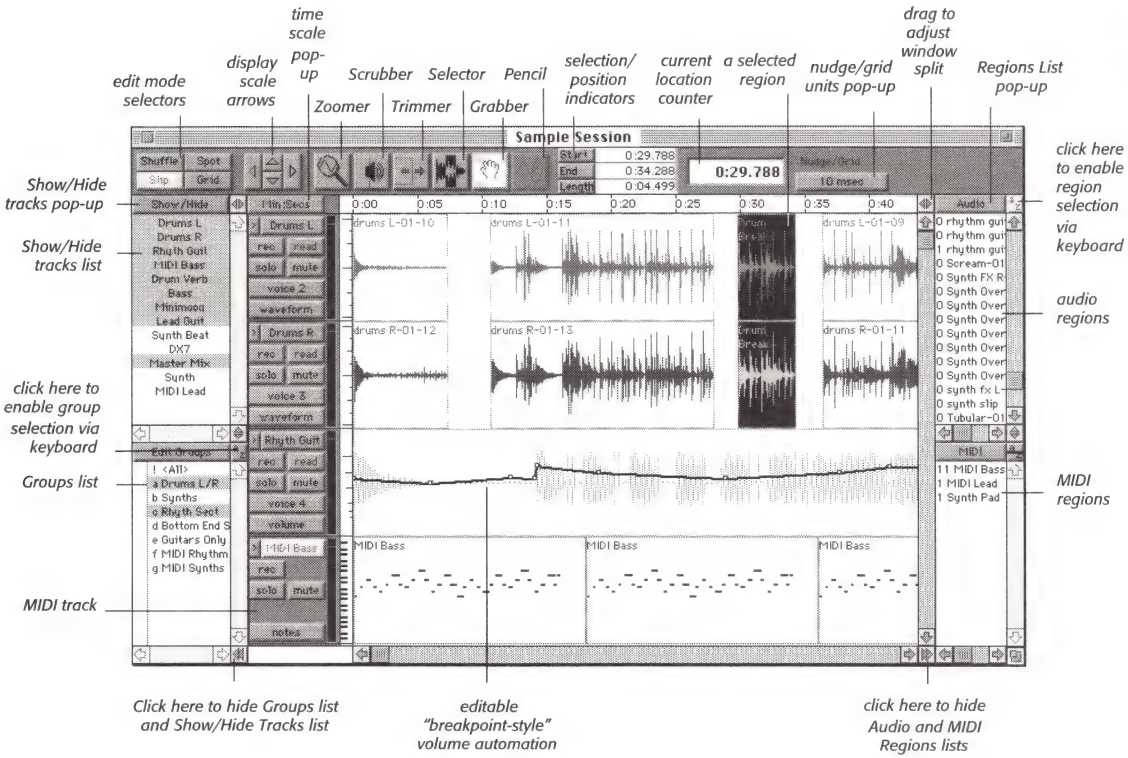
Shuffle Mode

In *Shuffle* mode, regions line up end to end like magnets. They "snap" to other regions or the beginning of a track. Adding a new region to a track simply "shuffles aside" any regions occurring after it by that region's length. This mode is most useful for arranging regions together so that they occur one after another in a track without overlapping or gaps between them.

Slip Mode

In *Slip* mode, regions can be moved freely, without snapping to other regions as they do in Shuffle mode. Regions can have space preceding or following them. They can be placed so that they overlap portions of other regions or entire regions. Unlike Shuffle mode,

Pro Tools Edit Window



regions placed into tracks in Slip mode don't "shuffle aside" subsequent regions. Compared to Shuffle mode, Slip mode gives you the most freedom for placing regions.

Spot Mode

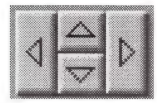
Spot mode is useful for sessions in which you wish to "spot" regions to specific time locations. In this mode, a region in a track can be quickly spotted by simply clicking it with the Grabber. A dialog will then appear prompting you to enter an appropriate time location. If you drag a region from the Regions List into a track while in Spot mode, a dialog prompting you to specify a time location for the region will appear automatically when you let go of the region.

Grid Mode

In *Grid* mode, the movement of regions is quantized to a user-selectable time value on an invisible time "grid." This mode is especially useful for lining up regions at precise intervals (as in a music session based around bars & beats or a post session using SMPTE frames). For example, if you have set the Grid to quarter note increments, dragging a region to a new location in a track will cause it to snap to the nearest quarter note location on the Grid. This provides you with a handy way of "quantizing" audio. You will also find that if you drag a region from the Regions List into a track while in Grid mode, the region will automatically snap to the grid when you let go of it.

The Nudge/Grid units selector

Grid values are selected by choosing the appropriate time format from the Display menu (Bars & Beats, Minutes:Seconds, Time Code, or Feet.Frames) and selecting the desired increments from the Nudge/Grid units pop-up menu at the top right of the screen.



The Display Scale Arrows

The Display Scale arrows adjust the track view, changing the display around its center point. The four arrows work like this:

The *up arrow* expands the vertical scale of the track view, making the waveform appear taller. This adjustment is useful in distinguishing amplitude values of audio data.

The *down arrow* performs the opposite function. It compresses vertical scale of the track view. Use it to decrease the height of the waveform so you can see its entire amplitude range.

The *right arrow* expands the horizontal scale of the track view. This stretches out the waveform, making it possible to distinguish individual audio samples or MIDI events. This is useful for checking zero crossings, and it also allows you to access the pencil tool to redraw waveforms.

The *left arrow* functions as the zoom out arrow. It compresses the horizontal scale of the track view to show you more of the duration.

The Zoomer

To use the Zoomer, click the Zoomer button and drag the cursor over a portion of the Edit window that you wish to view. When you release the mouse, the display zooms to your selection on the horizontal (time) axis of the Edit window. To zoom on both the vertical and horizontal axes, hold the Option key while dragging.

Keyboard Shortcuts

- Zoom selection to fill window: Option-click Zoomer
- Zoom out session to maximum/fill window: double-click Zoomer
- Zoom both the vertical and time axes: Option-drag Zoomer
- Zoom to previous orientation: Option-click the display scale arrows
- Zoom in/out horizontally: Command right/left bracket
- Zoom in/out vertically: Command-Option-right bracket/left bracket
- Maximum zoom with overview drawn from RAM: Command-click Zoomer.

The Scrubber

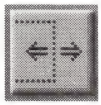
With the Scrubber tool, you can click anywhere on a track and drag the mouse to the right or left to begin playback at that point. Playback speed and direction vary with mouse movement. The Scrubber tool has three modes: Scrub, Shuttle, and Shuttle Lock. (The Scrubber tool is not available in Pro Tools PowerMix.)

In Scrub mode (the default), you can scrub up to but not faster than real time playback, and if you stop dragging, playback also stops. In this mode, scrubbing speed depends on your current screen zoom factor. Zooming in allows finer scrub control, while zooming out provides less control. In Shuttle mode (Option-drag), you can scrub at several times normal speed; playback continues as long as the mouse button is held down. In Shuttle Lock mode, you can trigger playback and control its speed by pressing the Control key and number 0-9 (9 is fastest, and 0 stops shuttling). In this mode, press the plus (+) to go forward and the minus (-) key to go backward.

Audio from a scrubbed track is routed out of the track's output and includes, if you are using a TDM system, any DSP Plug-In effects in the signal path. To scrub two tracks at once, drag between the tracks. If you wish the cursor to remain where you stop scrubbing, enable Insertion Follows Scrub/Shuttle in the Operation page of the Preferences dialog.

Keyboard Shortcuts

- To scrub with fine control, press the Command key and hold it while you drag.
- To temporarily toggle to the Scrubber while using the Selector, hold down the Control key.



The Trimmer

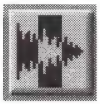
With the Trimmer tool, regions can be quickly shortened or expanded to a desired length. To trim a region, simply click the cursor at the right or left side of a region and drag towards the center. As you drag, the edge of the region is "trimmed off" until you release the mouse button. The cursor changes into the appropriate "right trim" or "left trim" shape as it is placed over the right or left side of the region.

To extend a region or expand it beyond its current definition, click the cursor on an edge of the region and drag outwards. The more you drag, the more data is "uncovered" until the region is restored to its original length, or to the entire length of the original audio or MIDI file.

If you click a region with the Trimmer while you are in Spot mode, you can enter a time location to specify exactly where you wish the region to begin or end. This is a convenient way to edit the length of a region to a particular "hit point" if you are doing audio post production work. The Trimmer is also used to trim automation values or "breakpoints."

Keyboard Shortcuts

- To reverse the direction of the Trim tool from any point in a region, hold down the Option key.
- To extend a region *up to but not beyond* the border of a neighboring region, hold down the Control key.
- To trim the border between two adjacent regions, hold down the Command key.



The Selector

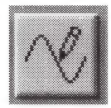
With the Selector tool, you can drag the cursor across any audio, MIDI, or automation data range in a track to select that range for editing. The cursor position is indicated in the Selection Indicator fields at the top right of the screen. Once a waveform range is selected, it can be captured as a region, separated as a region, or modified by any of the other operations listed in the Edit menu. Making a selection on a track that is a member of an enabled group will select the identical range on the other members of the enabled group as well.

Keyboard Shortcuts

- To temporarily toggle from the Selector to the Scrubber, hold down the Control key.
- To temporarily toggle from the Selector to fixed, fine-resolution scrubbing, press the Command and Control keys while dragging.

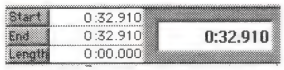
The Grabber

With the Grabber tool, tracks and regions can be moved or rearranged simply by clicking and dragging them to a new location. The four Pro Tools modes of editing operation, Slip, Shuffle, Spot and Grid, affect how regions can be moved with the Grabber.



The Pencil

The Pencil Tool is a destructive editing tool that allows you to permanently modify an audio waveform by "redrawing" it. For this reason it should be used with caution. It is most often used for manually repairing spikes in a waveform. The Pencil Tool is only available when you are zoomed in closely enough to see individual samples. Use of the Pencil Tool is covered in greater detail in the *Editing* chapter of the *Pro Tools Reference Guide*.

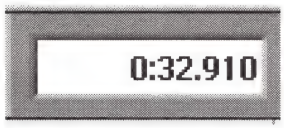


The Selection Indicators

The Selection Indicators provide information about the current selection's start point, end point, duration, and the current playback position. Information in the Selection Indicators can be displayed in Bars & Beats, Minutes:Seconds, Tim Code, Feet.Frames, or Samples depending on which Time Scale format is selected in the Display menu.

Start/End/Length Indicators

You can specify the dimensions of the current selection by entering values directly in these fields. The Start field gives the start point of the current selection. The End field gives the end point of the current selection. The Length field gives the duration of the current selection. Notice that when you display Time Code, you can select an entire field (which is convenient for entering and incrementing SMPTE values) as well as its individual time segments.



Current Location Indicator

This counter displays the value of the playback cursor's current time location in a track. To move the insertion point to a specific time location, click in the desired field (or press the equals key), then type in the desired time location and press Return. This feature is discussed in greater detail in the *Editing* chapter of the *Pro Tools Reference Guide*.

Numeric Entry Shortcuts

- Pressing the equals key (=) activates keyboard for entry of values in the Current Location and Big Counters.
- Pressing the slash key on the numeric keypad (/) cycles through the Start, End and Length fields.
- Pressing the period key (.) cycles through each time segment in a display field.
- The Left Arrow key selects the field to the left. The Right Arrow key selects the field to the right.
- The Up Arrow key increases numerical values. The Down Arrow key decreases numerical values.
- The plus (+) and minus (-) keys allow you to add or subtract a value from the value currently displayed in the selected field. (For example, to add ten to the current value in a field, cycle to the desired field, press the plus key, type "10" then press Enter.)
- Pressing the Clear key zeroes out all fields.
- Pressing the Escape key exits the time fields without entering any values.
- Pressing Return (or Enter) applies any new values you have entered.

The Nudge/Grid Units Selector

This menu allows you to select the value used in Pro Tools Grid Mode. It also defines the amount that regions can be "nudged" by pressing the plus (+) and minus (-) keys on your Macintosh keyboard. In addition, the value chosen here serves as the quantization value

for the Pro Tools MIDI Quantize and Quantize Region commands if you are using Bars & Beats as your time format. The units that appear here are controlled by the time format currently selected from the Display menu.

Numeric Entry Shortcuts

- Command-option-plus (+) allows you to increase the current grid value.
- Command-option-minus (-) allows you to decrease the current grid value.

The Time Scale Indicator/Pop-up Menu

This indicates the time scale currently in use. Options are Bars & Beats, Minutes:Seconds, Time Code (SMPTE frames) Feet.Frames, or Samples, as chosen in the Display menu. If you click the Time Format button at the far left of the scale, a pop-up will appear allowing you to quickly change time formats. If you wish to display data in Bars & Beats you must provide Pro Tools with Bar/Beat information (see below). SMPTE formats can be chosen in the Session Setup window.

Using the Bars & Beats Display Mode

In order to have bar/beat values appear in the bars/beats time display mode, Pro Tools must have a valid tempo map to work from. To have this, your session must contain one of the following:

- A single tempo specified by entering a BPM value in the MIDI Metronome dialog in the Setup menu.
- One or more MIDI tracks with MIDI regions that are used in an on-screen playlist.
- A tempo map created by using the Identify Beat command in the Edit menu.

NOTE: If you have selected Bars & Beats, and your session does not contain a valid bar/beat map, the counter displays will remain blank, even when Pro Tools is in record or playback mode.

The Show/Hide Tracks List

This scrolling window lists all tracks in the current session. It allows you to show or hide a track by selecting or deselecting its name here. To show a track, click to highlight its name. To hide a track, deselect its name. You can also use this list to reorder tracks on screen by dragging the desired track name to a new position within the list. The pop-up menu at the top of this list provides commands that allow you to show or hide all tracks, or only tracks currently selected on screen.

Keyboard Shortcuts

- Option-clicking a highlighted track name in this list hides all tracks.
- Option-clicking an unhighlighted track name in this list shows all tracks.
- Command-clicking a highlighted track name in this list toggles that track off and all others on.
- Command-clicking an unhighlighted track name in this list toggles that track on and all others off.

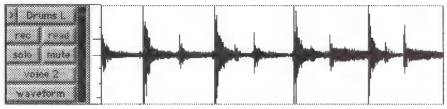
The Groups List

This scrolling window lists all track groups that you have created in the current session. It allows you to activate or deactivate a particular group by selecting or deselecting its name here. To activate a group, click to highlight its name. To deactivate a group, deselect its name. A group is only *enabled* (meaning its members are linked for purposes of mixing or editing) when its name is highlighted in this list. You can also use this list to select grouped tracks on-screen by clicking to the left of the desired group name. The pop-up menu at the top of this list provides commands to create, delete or suspend groups.

For more information on grouping, refer to the *Working with Tracks* chapter of this guide.

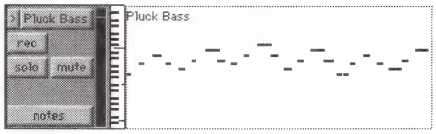
Keyboard Shortcuts

- Option-clicking a highlighted group name in this list activates all groups
- Option-clicking an unhighlighted track name in this list deactivates all groups
- Command-clicking a highlighted group name in this list toggles that group off and all others on
- Command-clicking an unhighlighted group name in this list toggles that group on and all others off
- Create New Edit/Mix Group: Command-G
- Suspend/Resume Groups: Command-Shift-G or Command Clicking on Groups pop-up menu
- To rename a group, double click the Group ID indicator in the Groups List
- Group Enable/Disable: type Group ID letters (available in Mix Window at all times; available in Edit window only by highlighting the "a-z" box at top right of the Edit Groups area)
- To show only tracks in a specific group: Control-click a group name in the Groups List. Control-Shift-click for multiple groups
- To suspend all groups: Control click the Groups pop-up menu



An Audio Track

This is where audio regions are strung together to form a playlist for audio playback. Audio regions can be arranged in any order in a track and can even be dragged onto other audio tracks. Each audio track (or *channel strip*) has its own name, playlist selector, record-enable, automation mode, solo, mute, volume, voice, and track display format selector. Data on each track can be individually viewed as blocks, waveforms, or an automation graph format by selecting any of these options in the pop-up Track Display Format pop-up menu. Tracks can also be viewed at a variety of heights by choosing the desired track height from the pop-up track height menu. They can also be hidden from view with the Show/Hide Tracks List, should you need to streamline your on-screen track display. These and other track management features of Pro Tools are covered in the *Working With Tracks* chapter in this guide.



A MIDI Track

This is where MIDI regions are strung together to form a Playlist for MIDI playback. MIDI regions can be arranged in any order in a track and even be dragged onto other MIDI tracks. Each MIDI track (or *channel strip*) has its own name, record-enable, solo, mute, channel/MIDI port selector, and display format selector. Data on MIDI tracks can be displayed in Blocks or Note format by choosing one of these options from the pop-up Track Display Format selector. Tracks can also be viewed at a variety of heights by choosing the desired track height from the pop-up track height menu. They can also be hidden from view with the Show/Hide Tracks List, should you need to streamline your on-screen track display. These and other track management features of Pro Tools are covered in the *Working With Tracks* chapter in this guide.

Track Name

The name of a track appears here. When new tracks are created with the New Track command, they are given a default name which can be changed at any time by double-clicking the track name or using the Rename Selected Tracks command in the File menu.

Record Enable Button

Clicking this button puts the selected track into record-ready mode. For more information about this button, refer to the explanation of the *Mix Window* earlier in this chapter.

Automation Mode Selector

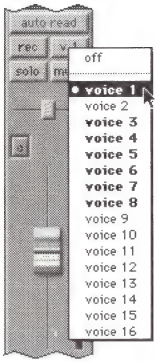
This button allows you to choose an automation mode. Pro Tools has five automation modes: Off, Read, Touch, Latch, and Write. These modes are explained in detail in the *Mixing* chapter of the *Pro Tools Reference Guide*. Once a track is automation record-enabled, clicking the Transport's Play button will initiate automation recording (depending on the mode you have chosen). Any fader or pan moves that you make on the selected track will then be recorded and played back exactly as you performed them.

Keyboard Shortcuts

- Option-clicking on the automation mode button sets all tracks to the selected automation mode
- Option-Shift clicking on the automation mode button sets all currently selected tracks to that automation mode

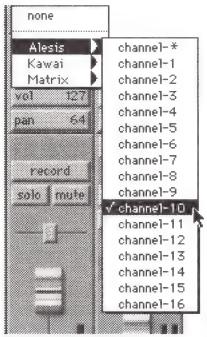
Solo and Mute Buttons

The *solo* button mutes other tracks so that the selected track can be auditioned alone. The *mute* button silences the selected track. For a complete explanation of these buttons, see the explanation in the *Mix Window* section of this chapter.



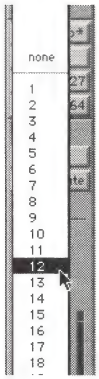
Voice Selector

Clicking this box brings up a pop-up menu in which the selected track can be assigned a Voice for audio playback. This function is explained in greater detail in the *Mix Window* section of this chapter.



MIDI Device/Channel Selector

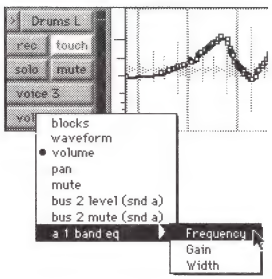
Clicking the top box of a MIDI track brings up a pop-up MIDI Device and Channel Selector menu. This menu allows you to route the MIDI track to a desired OMS port destination, or directly to a Digidesign SampleCell card installed in your computer. It also allows you to assign a MIDI channel to the track. The default setting for the channel is "channel -*" which means all regions will retain MIDI channel assignments they had when they were recorded or imported into Pro Tools. They will then play back on whatever MIDI channel they were assigned to in the original MIDI file.



MIDI Patch Selector

Clicking the second box of a MIDI track brings up a pop-up MIDI Patch Selector menu. This menu allows you to select MIDI patch or program information to the device associated with that track.

NOTE: In order for the Pro Tools software to see a MIDI interface attached to the Macintosh's modem or printer serial port, you must turn on the interface before you start Pro Tools.



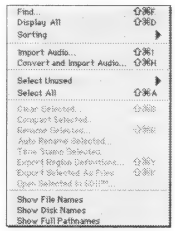
Track Display Format Selector

Clicking this button brings up a pop-up menu in which a track's data display format can be chosen. Choices include *blocks*, *waveform*, *volume* graph, *pan* graph, *mute* graph, *send level*, *send mute*, or graphs for any Plug-In parameters that have been automated.

When a track is displayed as automation, the automation data for that track appears in the form of a line graph with a series of editable breakpoints. The breakpoints can be dragged to modify the automation data. When a track is displayed as region blocks, regions are displayed as simple blocks with the region name inside. Displaying a track as region blocks helps speed up screen redraws since there is much less data to be shown.

Keyboard Shortcuts

- Holding down the Option key while you choose a display format will display all tracks in the format that you choose
- Holding down Option-Shift while you choose a display format will display all currently selected tracks in the format that you choose

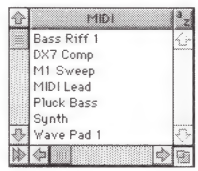


Audio Regions List and Pop-up Menu

This is where audio regions appear after being recorded, loaded into Pro Tools with the Import Audio or Convert and Import Audio commands, or created with one of the Edit commands. From here, they can be dragged into tracks and arranged in whatever order you choose. Using the Regions List pop-up menu (at the top of this list) you can sort this list by a variety of attributes including region name, region length, source file name, and source file length. When keyboard selection is enabled (by clicking click the small "a-z" box at the top right corner), regions can be selected by typing the first letters of the region's name. This alphabetic search function ignores Volume and File names in the Regions List and locates regions based on their region names only.

In addition to the unique name that you give a region when you create it, you can choose to display additional aspects of a region name in the Regions List, including the File name, which represents the audio file from which the region originated, the Disk name, which represents the name of the hard drive on which it resides, and the full directory Pathname of the region's location. Pro Tools defaults to displaying just the region portion of a region's name. To display other parts of a region name, choose Show File Names, Show Disk Names or Show Full Pathnames from the pop-up menu at the top of the Audio Regions List.

Because region names can become lengthy (up to 31 characters), the Audio Regions List can be scrolled in order to view full names. If you enable the Regions List Selection Follows Track Selection option in the Editing page of the Preferences dialog, clicking the name of an audio region in the Regions List will highlight it in a track. Holding down the Option key and clicking a region's name in this list will allow you to audition that region. The window "split" can be moved to increase or decrease the width or length of the Regions List. You can hide this list by clicking the double right arrow icon at the bottom of the MIDI Regions List.

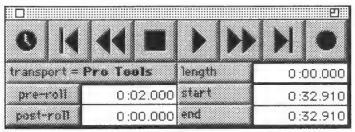


MIDI Regions List and Pop-up Menu

This is where MIDI regions appear after being recorded into Pro Tools or loaded into Pro Tools with the Import MIDI command. From here, they can be dragged into tracks and arranged in any order. Using the MIDI Regions List pop-up menu (at the top of this list) you can sort this list by a variety of attributes including region name, region length, and region time stamp. When keyboard selection is enabled (by clicking the small "a-z" box at the top right corner), regions can be selected by typing the first letters of the region's name. This alphabetic search function ignores Volume and File names in the Regions List and locates the region based on its region name only.

MIDI region names reflect both the name that you have given them and their name from the MIDI track of their the original sequence. If you choose to display both names with the Show File Names command (in the Audio Regions List pop-up menu), the original MIDI track name appears first, followed by a slash (/) and your name for the region. The MIDI Regions List can be scrolled in order to view full names. If you enable the Regions List Selection Follows Track Selection option in the Editing page of the Preferences dialog, clicking the name of a MIDI region in the MIDI Regions List will highlight it in a track. You can hide this list by clicking the double right arrow icon at the bottom of the MIDI Regions List.

Refer to the *Recording* chapter of the *Pro Tools Reference Guide* for more information on MIDI recording and playback capabilities.



The Transport Window

The Transport functions much like a conventional tape transport. If you wish, you can hide the Transport's pre-roll and selection indicators by clicking the resize box located at the top right of this floating window.

Online

Puts Pro Tools online, just as if you had selected Online from the Options menu. In this mode, recording or playback can be triggered by an external SMPTE-driven source.

Return to Zero

Sets the playback cursor to the beginning of the session.

Rewind

Rewinds the session, starting from the current cursor position.

Fast-Forward

Fast-forwards the session, starting from the current cursor position.

Stop

Stops playback.

Play

Begins playback from the current cursor position.

Go To End

Sets the playback cursor to the end of the session.

Record

Arms Pro Tools for recording. Clicking the Play button then initiates recording.

Pause

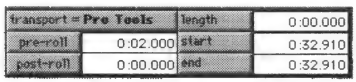
Pro Tools requires time to prepare to play back or record. To avoid this delay, put Pro Tools into Pause mode by holding the Option key and clicking the Play button. When in Pause mode, the Stop button is lit and the Play button flashes. Click Play (or press the Spacebar) to instantaneously begin playback or recording. Click Stop to take Pro Tools out of pause mode.

Rewind/Fast Forward Settings

If the Audio During Fast Forward/Rewind option is selected in the Operation page of the Preferences Dialog, you will hear scanned audio (as on a CD player).

If the Audio During Fast Forward/Rewind option is not selected, you can continuously rewind/fast forward by holding down the appropriate transport button. You can also rewind/fast forward incrementally by repeatedly clicking the appropriate button. The size of these increments depends on which Display mode is currently selected:

- Bars and Beats: moves to start of previous/next bar
- Min/Sec: moves back/forward in one-second steps
- Timecode: moves back/forward in one-second steps (while adjusting for current timecode format)
- Feet.Frames: moves back/forward in one-foot steps
- Samples: moves back/forward in one-second steps



Pre/Post-Roll and Selection Indicators

These indicators display the values currently set for Pro Tools playback. These values are also used in auto-punch in/punch out recording. Auto-punch and QuickPunch recording are covered in detail in the *Recording* chapter of the *Pro Tools Reference Guide*.

Pre-Roll

The *Pre-roll* field allows you to specify how many seconds (or other chosen time unit) of audio you wish to add to the *beginning* of a playback selection. Pre-roll is particularly useful in punch-in recording since it provides you with time to "catch the beat" before reaching the punch-in point. To enable pre-roll, click the pre-roll button to the left of the pre-roll field. When pre-roll is enabled, this button will appear highlighted.

Post-Roll

The *Post-roll* field allows you to specify how many seconds (or other chosen time unit) of audio you wish to add to the *end* of a playback selection. Post-roll is also useful in punch recording since it provides you with extra time after reaching the punch-out point to check for a smooth transition to previously recorded material. To enable post-roll, click the post-roll button to the left of the post-roll field. When post-roll is enabled, this button will appear highlighted.

Length/Start/End

The Length field indicates the length of the playback area, as specified by the selected range on a track. The Start field indicates the point at which playback begins, as specified by the cursor or selected range on a track. The End field indicates the point at which playback ends, as specified by the selected range on a track.

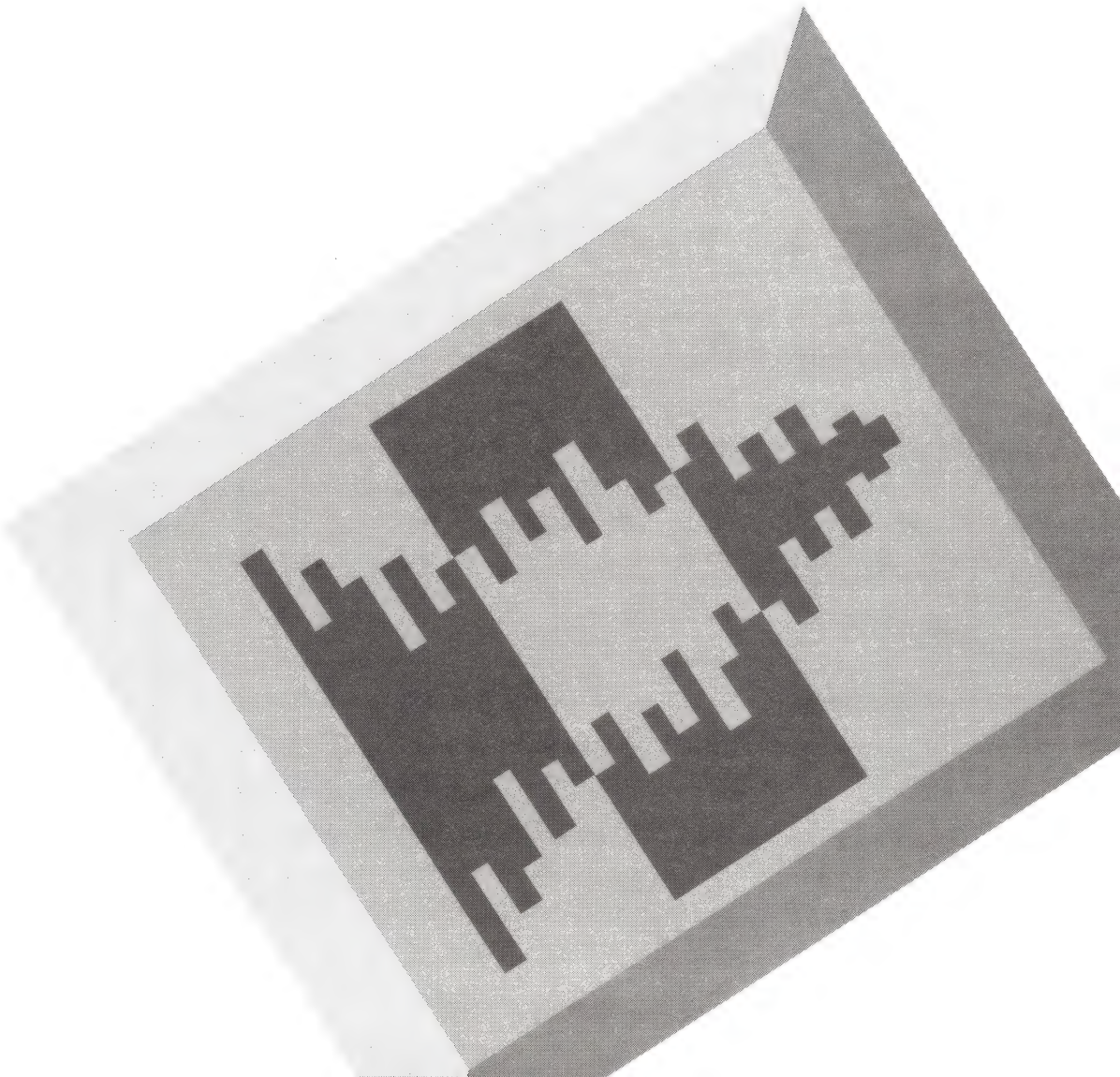
You can edit these values by clicking on a time field and entering the desired values in the selected time segment. Note that when the fields are displaying Time Code, you can select the entire field (which is convenient for entering and incrementing SMPTE values) as well as its individual time segments.

Keyboard Shortcuts

- Pressing the Spacebar starts and stops playback.
- Control-Spacebar puts Pro Tools in Pause mode.
- Command-K enables/disables pre-/post-roll playback.
- Clicking any of the fields enables keyboard entry for Pre/Post-Roll and Start/End/Length fields.
- Pressing the slash key on the numeric keypad (/) cycles through the fields of each indicator.
- Pressing the period key (.) cycles through each time segment in a field.

- The Left Arrow key selects the field to the left. The Right Arrow key selects the field to the right
- The Up Arrow key increases numerical values. The Down Arrow key decreases numerical values. Values increment the adjacent field if they exceed the maximum for the current field.
- The plus (+) and minus (-) keys allow you to add or subtract a value from the value currently displayed in the selected field. (For example, to add ten to the current value in a field, cycle to the desired field, press the plus key, type "10" then press Enter.)
- Pressing the Clear key zeroes out all fields.
- Pressing the Escape key exits the time fields without entering any values.
- Pressing Return or Enter confirms and executes any new values you have entered.

Working with Tracks



Chapter 4

Working with Tracks

Introduction

Before you begin recording to disk, you should have a fundamental understanding of Pro Tools tracks and how to manage them. This chapter covers basic track management tasks such as creating and deleting tracks, selecting playlists, assigning voices and output channels, adjusting volume and panning, and more.

How Pro Tools Manages Tracks

When you are editing audio or MIDI with Pro Tools, you will work with two types of objects: *tracks* and *regions*. For simplicity's sake we'll deal with audio tracks and audio regions in the following explanation.

Though you may think of audio and MIDI data as very different entities, Pro Tools treats them much the same. The result is that the recording and editing techniques are identical for both.

A *region* is a piece of audio or MIDI data of any length. An audio region could be a guitar riff, a verse of a song, a sound effect, a piece of dialogue, or an entire audio file. Regions are strung together to create *playlists*. A playlist is simply an arrangement of regions. Playlists reside on *tracks*. Pro Tools allows you to create an almost unlimited number of playlists in a session and assign them freely to any track in a session.

Because the concepts of playlists and tracks are tied so closely together, the Pro Tools definition of a track is somewhat broader than the conventional multitrack tape analogy. A track can be made up of a single region or many regions. It can be made up of similar elements, as in the case of a composite guitar solo track made up of regions from several different "takes" of the solo. It can also be made up of dissimilar elements, as in the case of a track made up of several different sound effects regions.

Though the Pro Tools Mix and Edit windows differ in the way that they display tracks (a mixer module in the Mix window, versus graphic waveforms in the Edit window), the way that they manage them is the same. However unusual this new way of dealing with sound may seem to you at first, you will soon find that recording and editing sound this way is far more powerful and flexible than anything you have experienced before.

Creating Tracks

You can add tracks to your session at any time by using the New Track command. New tracks created with this command will then appear in your session in both the Edit and Mix windows. Remember that for Pro Tools 24 and Pro Tools III, each new audio track that you create will use a portion of your DSP Farm's processing power.

The number of tracks, voices and simultaneous recording limits of each Pro Tools system vary depending on the Pro Tools system, and, in the case of DAE/PowerMix, on CPU and hard disk speed. The actual number of tracks you can play back at a given time—the number of voices your system provides—depends on how many d24 or Disk I/O cards your system has. Refer to Appendix A of the *Pro Tools Reference Guide* for details on system track counts.

Adding New Tracks

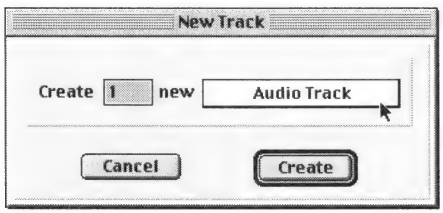
Pro Tools conveniently allows you to choose where to insert new tracks by selecting an existing track's name on-screen.

Before you create the new tracks:

- If you wish the new tracks to appear next to a specific track in your session, select that track by clicking its name. Pro Tools will add the new tracks immediately after that track.
- If you wish the new tracks to appear at the very end of the session, make sure that no track names are selected on-screen.

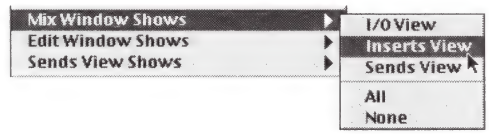
To create a new audio or MIDI track:

1. Choose New Track from the File menu.
2. In the New Track dialog, choose the type of track you wish to create from the pop-up menu. (Only those track types supported by the current Playback Engine will appear.)
3. Enter the number of new tracks you want to create, and click OK. The new track is empty until you record on it or place a region into it from the Audio Regions List or MIDI Regions List.



Creating a new track

4. If you wish to give names to your tracks, double-click the Track Name button at the bottom of each track in the Mix window. In the dialog that appears, enter a name and click OK. This name will also be given to any audio files that you record on the track.
5. If you wish to display track inputs/outputs, choose Mix Window Shows or Edit Window Shows from the Display menu and choose the I/O View from the submenu. If you wish to show all of these controls (I/O, Inserts, and Sends), choose All. The selected controls then appear on the new track (and all other tracks in the window).



Displaying the input/output selectors

To rename existing tracks in your session:

1. Select the tracks you wish to rename by clicking the track names (Shift-click to select multiple tracks).
2. Choose Rename Selected Tracks from the File menu.
3. Type a new name and click OK for each track you are renaming.

Deleting Tracks

You can remove tracks from your session with the Delete Selected Tracks command in the File menu. While your audio or MIDI region data will remain in the Regions List, your arrangement of the regions on the deleted track (the track's playlist) will be lost. The Delete Selected Tracks command cannot be undone.

To delete a track:

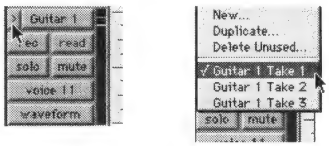
1. Click the name of the desired track to select it. If you wish to select multiple tracks, hold down the Shift key and click additional track names to select them as well.
2. Choose Delete Selected Tracks from the File menu.
3. Click OK to remove the selected tracks from the session.

Pro Tools will warn you before deleting tracks. To bypass this warning, hold down the Option key when you choose the Delete Selected Tracks command.

About Playlists

The ability to create *playlists* is one of the most powerful features of Pro Tools —and one reason why it is infinitely more versatile than traditional multitrack recorders.

You can think of playlists as alternate takes where regions are simply rearranged into a different order on a particular track. A playlist can consist of a single region or many regions. Pro Tools allows you to create playlists freely and load or unload them onto tracks as you wish by clicking on a track's *playlist selector* in the Edit window.



Clicking the playlist selector to display the Playlist pop-up

Multiple Edit Playlists

Pro Tools allows you to use the playlist feature to create alternative arrangements of audio regions for each track. These are called *multiple edit playlists*. Though you can create an almost unlimited number of edit playlists, Pro Tools permits only a single *automation* playlist per track.

Adding a New Playlist

When you first create a new track, its playlist is empty until you record on it or drag regions into it. If you want to create a new, empty playlist on that track to begin experimenting with different arrangements of regions, you can use the New command in the playlist pop-up menu. When you choose this command, Pro Tools will create a new empty playlist in the current track. If there is already a playlist assigned to this track, it will be unassigned from the track (and will then be available to any other track via the playlist pop-up).

To add a new playlist:

1. Click the playlist selector on the desired track.
2. In the playlist pop-up menu, choose New.
3. Name the playlist in the dialog that appears and click OK.
4. An empty playlist with the name you assigned appears in the current track.

Duplicating a Playlist

The Playlist pop-up menu also allows you to duplicate your current playlist. A common use for this feature is to create a "safety copy" of a playlist so that you can experiment freely and still be able to go back to original version if you wish. When you duplicate a playlist, Pro Tools allows you to name the duplicate before placing it on the track in place of the original.

To add a duplicate playlist:

1. Click the playlist selector on the desired track.
2. In the playlist pop-up menu, choose Duplicate.
3. Click OK if you wish to use the default playlist name, or enter a new name.
4. The duplicated playlist now appears on the track, and the track's name changes to the name of the playlist.

Assigning a Different Playlist

With the same pop-up menu, it's possible to assign a different playlist to a track. When you do this, the playlist which is currently active on the selected track will be temporarily replaced by the new playlist. (Unassigned playlists are available to other tracks via the playlist

pop-up.) You cannot assign a playlist that is currently in use on another track.

This is a useful way to experiment with different arrangements in a session or to temporarily use tracks to beef up a specific part (such as vocal harmony) and then bounce the tracks down to one or two tracks later. Bouncing is covered in the *Mixing* chapter of the *Pro Tools Reference Guide*.

To assign a different playlist:

1. Click the playlist selector on the desired track.
2. In the playlist pop-up menu, choose the desired playlist. (Only playlists that are currently unassigned will appear in this pop-up.) The playlist is loaded onto the track.

When a playlist is unassigned, it still exists in the session file and can be reassigned to a track at any time.

Deleting a Playlist

If you wish, you can delete a playlist from a session entirely. However, since playlists take almost no disk space, you don't need to delete them for space reasons.

To delete a playlist currently loaded on a track:

1. Click the playlist selector on the desired track.
2. In the playlist pop-up menu, choose Delete Unused. A list of unassigned playlists appears.
3. Choose the playlist(s) you wish to delete (Shift-click to select multiple playlists).
4. Click OK to delete the playlists. This operation cannot be undone.

Renaming Playlists

You can rename a currently assigned playlist at any time by simply renaming the track on which it resides.

To rename a playlist currently loaded on a track:

1. Double-click the track name button on the desired track.
2. Enter a new name and click OK. The playlist/track will be renamed.

Hiding Tracks

If a session has many tracks, even a large-screen monitor can quickly fill up, making it necessary to scroll through dozens of tracks to locate the one you wish to manipulate. The Show/Hide Tracks List (at the left of both the Mix and Edit windows) allows you to streamline your display by hiding tracks you don't wish to view. Be aware that even though a track is hidden, the material on the track (be it audio or MIDI data) will still play as part of a session.

The Show/Hide Tracks List

This scrolling window lists all tracks in the current session. It allows you to show or hide a track by selecting or deselecting its name here. To show a track, click to highlight its name. To hide a track, deselect its name. The pop-up menu at the top of Show/Hide Tracks List provides commands that allow you to show or hide all tracks, or only tracks currently selected on screen.

When a track that is a member of an active group is hidden from view, editing operations performed on other members of the group in the Edit window will not affect the hidden

track. In the Mix window however, all operations other than record-enable will affect a hidden track that is a member of an active group.

Even if a track is hidden from view, its position relative to other tracks still affects playback priority. Don't confuse the ability to hide tracks with the ability to delete them with the Delete Tracks command. With the Show/Hide Tracks List, track playlists continue to exist but are invisible when not highlighted.

To hide a track:

Click the name of the desired track in the Show/Hide Tracks List. This unhighlights the track name in the window and hides the track on-screen.

To show a track that is currently hidden:

Click the name of the unhighlighted track in the Show/Hide Tracks List. This highlights the track name in this window and displays the track on-screen.

To show all tracks:

1. Click the Show/Hide pop-up at the top of the Show/Hide Tracks List.
2. From the menu, choose Show All Tracks. All tracks in the session appear.

To hide all tracks:

1. Click the Show/Hide pop-up at the top of the Show/Hide Tracks List.
2. From the menu, choose Hide All Tracks. All tracks in the session are hidden.

To reorder tracks on screen, drag the desired track name to a new position within the Show/Hide Tracks List.

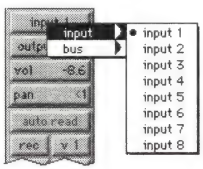
Keyboard Shortcuts

- Option-clicking a highlighted track name in this list hides all tracks
- Option-clicking an unhighlighted track name in this list shows all tracks
- Command-clicking a highlighted track name in this list hides that track and shows all others
- Command-clicking an unhighlighted track name in this list shows that track and hides all others

Assigning Track Inputs

Your Pro Tools system provides a certain number of hardware inputs, in the form of the physical inputs on your Pro Tools Audio Interface(s), your Audiomedia III card, or your CPU's built-in audio input jack (for PowerMix). The number of inputs you have depends on the size of your Pro Tools system:

- Pro Tools 24 Core system provides up to 32 input channels
- Pro Tools III Core system provides 16 input channels
- Pro Tools Project supports up to 8 input channels
- Pro Tools Audiomedia III provides 2 input channels
- Pro Tools PowerMix systems support 2 input channels via your CPU's built-in sound input connector



Input selector of system with a single 8-channel audio interface

With Pro Tools 24 and Pro Tools III, if you have multiple audio interfaces, they are referred to in order as input #1 1-8, input #2 1-8, and so on.

To assign a track input:

1. If I/O controls are not currently visible on your tracks, choose the Mix Window Shows command from the Display menu and choose I/O View.
2. If you wish to show these in the Edit window as well, choose the Edit Window Shows command from the Display menu and choose I/O View.
3. Click the input selector button on the desired track.
4. Choose one of the available input sources from the pop-up menu.

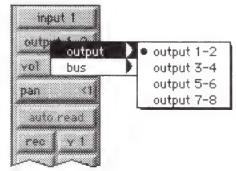
To set all tracks in a session to the same input, hold down the Option key and select the desired input from the input pop-up.

To set all tracks currently selected on screen to the same input, hold down Option-Shift and select the desired input from the input pop-up.

Assigning Track Outputs

Your Pro Tools system provides a certain number of hardware outputs, in the form of the physical outputs on your Pro Tools Audio Interface(s), your Audiomedia III card, or your CPU (for PowerMix). The number of outputs you have depends on the size of your Pro Tools system:

- Pro Tools 24 Core system supports up to 32 channels of output
- Pro Tools III Core system supports up to 16 channels of output
- Pro Tools Project provides 8 channels of output
- Pro Tools with Audiomedia III supports 2 output channels.
- Pro Tools PowerMix provides 2 output channels via your CPU's built-in audio jacks.



Output selector (stereo outputs mode on an 8-output system)

Pro Tools has two different operating modes, Direct Outputs mode and Stereo Mix Outputs mode. These modes allow you to configure Pro Tools to match your particular studio setup. If you are using Pro Tools Project, you can utilize either mode.

In Direct Outputs mode, track outputs are routed to a single Audio Interface output. Track panning controls are not available in Direct Outputs mode. With Pro Tools 24 and Pro Tools III systems, if you have multiple audio interfaces, they are referred to in order as output #1 1-8, output #2 1-8, and so on.

In Stereo Mix Outputs mode, track outputs are routed to a pair of Audio Interface outputs or (with TDM-equipped systems) TDM Bus destinations, such as output #1 1-2, output #1 3-4, and so on. Each track contains controls for panning between the two selected output pairs.

To assign a track to an output:

1. If I/O controls are not currently visible on your tracks, choose the Mix Window Shows command from the Display menu and choose I/O View.
2. If you wish to show these in the Edit window as well, choose the Edit Window Shows command from the Display menu and choose I/O View.
3. Click the output selector button on the desired track.

4. From the pop-up menu, choose either the desired Audio Interface's output channel(s), or (on TDM systems only) the desired internal TDM buss(es) as an output source.

To set all tracks in a session to the same output, hold down the Option key and select the desired output from the output pop-up.

To set all tracks currently selected on screen to the same output, hold down Option-Shift and select the desired output from the output pop-up.

Virtual Tracks, Voices, and Track Priority

The true flexibility of Pro Tools is revealed when we explore the concepts of voices, virtual tracks and track priority.

Voices and Virtual Tracks

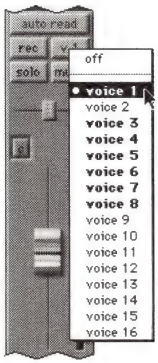
A Pro Tools 24 core system's hardware provides up to 32 voices or disk tracks of audio playback. That is, 32 different sounds can play at one time on a Pro Tools 24 core system—much like a 32-channel multitrack tape deck or a 32-voice synthesizer. A Pro Tools III system provides 16 voices. Pro Tools Project and Audiomedia are 8-voice systems. PowerMix systems can range from 4 to 16 voices, depending on CPU speed and hard drive performance. Refer to Appendix A of the *Pro Tools Reference Guide* for details on track counts for each system.

To further expand the number of simultaneous voices available on your Pro Tools 24 or Pro Tools III system, you'll need Pro Tools expansion kits. Pro Tools Project, Pro Tools with Audiomedia, and PowerMix systems cannot be expanded in this way.

While your Pro Tools hardware allows a fixed number of voices, Pro Tools software provides for up to 128 *virtual tracks*—tracks which can be recorded upon and cued up for playback but cannot all be played back simultaneously. Such tracks are called virtual tracks because they provide virtually all of the functionality of real tracks except for this limitation.

In such an environment where there are potentially more tracks than can play back at one time, Pro Tools must have a way of deciding which tracks get priority when these tracks compete for the available voices. Pro Tools provides two ways of assigning playback priority to audio tracks:

The Voice Selector When you click a track's voice selector, a pop-up menu appears offering a choice of voice numbers, which refer to voice assignments.



An Audio Track's Voice selector

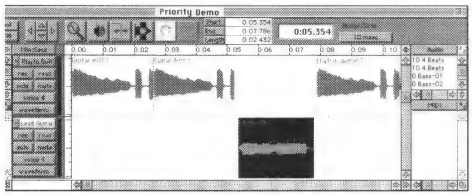
On-screen track placement The left-most track in the Mix window (or the topmost track in the Edit window) has priority over other tracks with the same voice assignment.

It is possible to assign more than one track to the same voice, but only one of the tracks—the one with highest priority (the topmost track in the Edit window)—will play.

Enabling the Mute Frees Voice command (in the Options menu) and muting a track disables playback of that track, and surrenders control of its voice to the next highest priority track with the same voice assignment.

Another important point to understand about Pro Tools is that it has *dynamic voice allocation*. When a "hole" opens up in a higher-priority track, its voice is temporarily available, and the track with the next highest priority "pops through" and begins to play. When the original track returns, the track that had popped through relinquishes the voice to the higher priority track again.

The following example demonstrates the concept of dynamic voice allocation:



The "Lead Guitar" region will pop through

In the above illustration, the two visible tracks are assigned to the same voice, Voice 4. There is an open area in the top (Rhythm Guitar) track where no region appears. At this point, voice 4 is free since it is not being used, and the next highest priority track on voice 4 (Lead Guitar), will pop through the open area and play. There is one important trick to remember when using this feature: in order for a lower priority region to pop through, it must be placed so that its beginning occurs *after* a higher priority track's region has ended.

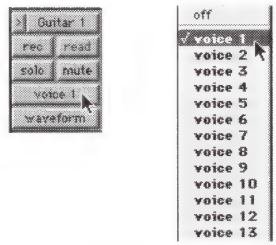
This type of intelligent, dynamic voice allocation is one of the most powerful features of Pro Tools.

Assigning Voices and Track Priority

You can use track priority settings, voice assignment, and output assignments to get the most out your system configuration.

To assign an audio track to a voice:

1. Click the track's voice selector.
2. Select the desired voice from the pop-up menu. The track is now assigned to the voice you have chosen. Voices listed in boldface type are already in use by other tracks in the session.



Assigning a voice

Changing a Track's Playback Priority

When more than one track is assigned to the same voice, the track that occurs earliest (left-most in the Mix window or topmost in the Edit window) has priority over others assigned to that voice. Moving another track of the same voice to a higher position will then give that track priority.

You can drag a track to a new position in either the Mix or Edit windows to change its playback priority.

To increase a track's priority in the Edit window:

Click the track's Track Name button and drag it above another track assigned to the same voice.

OR

In the Show/Hide Tracks List, drag the track to the desired position in the list of tracks. Tracks nearer the top of this list have higher priority.

To increase a track's priority in the Mix window:

Click the track's Track Name button and drag it to the left of another track assigned to the same voice.

OR

In the Show/Hide Tracks List, drag the track to the desired position in the list of tracks. Tracks nearer the top of this list have higher priority.

By experimenting with track priority, voice assignment, and arranging regions so that they are positioned to "pop through" holes in higher priority tracks, you will find many useful ways to apply virtual tracks and dynamic voice allocation.

Voice Management In Expanded Systems (Pro Tools III only)

Voice Numbering

In expanded Pro Tools III systems, the first 16 voices of your system are numbered A-1—A-16. The next Disk I/O's voices would be numbered B-1—B-16, and if you have a third Disk I/O, its voices would be numbered C-1 through C-16.

Managing Voices in Expanded Systems

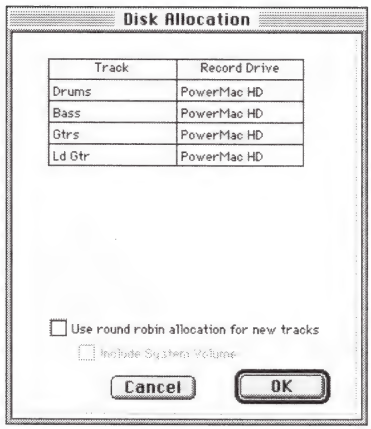
In expanded Pro Tools III systems each Disk I/O card requires that a separate SCSI hard drive be attached to it, with specific audio files residing on specific drives. An audio file or region that resides on one Disk I/O's hard drive cannot be moved to a track routed to a different Disk I/O drive. If you try to do this, Pro Tools will alert you and allow you to automatically copy the sound file to the destination voice's drive.

The following scenarios will cause voice assignment conflicts which you will have to resolve by either reassigning voices, copying sound files, or managing "Ghost regions" (see below for details):

- If you attempt to put regions from Disk I/O "A" voice track onto a Disk I/O "B" voice track, or vice-versa.
- If you attempt to drag a region that resides on Disk I/O "A" from the Audio Regions List onto a track which is assigned to a Disk I/O "B" voice track, or vice-versa.
- If you have a multiple Disk I/O system and you assign a track to a voice which does not correspond to the hard drive that the track's regions belong to.
- If you have a multiple Disk I/O system and you've moved a drive which was originally connected to a different Disk I/O.

For example, imagine that you have a 32-voice Pro Tools III system with two Disk I/O's. Disk I/O "A" provides voices 1-16, and Disk I/O "B" provides voices 17-32. If you decide to move a region that resides on the Disk I/O "A" drive to a track routed to Disk I/O "B," or if you try to change a track with Disk I/O A audio from an "A" voice to a "B" voice, Pro Tools will warn you and give you the option of copying the sound file to the destination Disk I/O drive. If you click OK, Pro Tools will copy the entire sound file (not just the single region) to the appropriate Audio Files folder on the destination drive.

The audio file will be copied to whatever drive is specified in the Disk Allocation dialog box for that track. Before you begin copying files, be sure the destination drive has sufficient space. If the destination drive doesn't have enough space, the copy procedure will be cancelled and any material that hasn't been fully copied will be discarded.



The Disk Allocation dialog

Ghost Regions

If you decide not to copy the file, Pro Tools will display what are called *Ghost regions*. Ghost regions occur in cases where Disk I/O SCSI chain/voice combinations make them invalid for playback. A Ghost region appears "grayed out" (much like a muted region does) and signifies that the audio is not present on the drive to which the voice refers, and is therefore *not available for audio playback as currently assigned*. If you have Ghost regions in a session, each time you open the session it will ask you if you wish to copy the Ghost regions onto the appropriate drive so that you will be able to use the regions as voiced.

Ghost regions can still be selected with the Grabber tool and moved or deleted, or auditioned from the Regions List. They simply will not play as currently assigned. They can become regular "active" regions again if you place them on a track/voice that is valid for the Disk I/O associated with the region.

If a drive from one Disk I/O SCSI chain is swapped to another, ghost regions will appear for all of the tracks/regions that have been swapped. In this case you will have to either reconnect the drives to the correct Disk I/O's, use the dialog shown below to resolve the conflict (by copying the audio to the relevant hard drive), or manually reassign every track's voice to a valid Disk I/O drive in order to use them.

If you open a session which has a region/voice/hard drive assignment conflict, a warning dialog will appear, alerting you of this condition and offering several solutions. The options in the dialog are as follows:

Look for Duplicated Files If this option is enabled, before it begins copying files to the necessary drive, Pro Tools will check if the needed "parent" audio files or regions have already been copied to the drive. This helps prevent unnecessary duplication of audio data.

Look for Compatible Voices If this option is enabled, Pro Tools will try to resolve the problem by assigning conflicting voices from the "swapped" drive to available valid voices.

Copy Files to New Drives. If this option is enabled, Pro Tools will copy the files to the necessary drive (if there is enough space). If the Look for Duplicated Files option is also enabled, Pro Tools will check if the needed "parent" audio files or regions already reside on the drive before it begins copying. If the Look for Duplicated Files option is not enabled, Pro Tools will copy the required files without checking first.

Alternatives to Copying an Entire Audio File

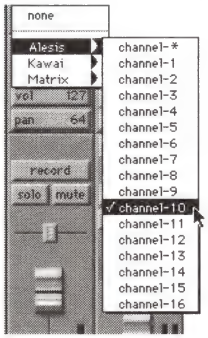
If you wish to move a region without copying the entire sound file, you can place the region on a track which is routed to a drive where the audio actually resides. Alternatively, you can use the Duplicate Plug-In in the AudioSuite menu, or you can bounce the region to disk, thereby creating a new audio file that consists of just the region. Refer to the *Plug-Ins* chapter of the *Pro Tools Reference Guide* to learn how to use the Duplicate Plug-In. For information on bouncing, refer to the *Mixing* chapter in the *Pro Tools Reference Guide*.

Setting MIDI Channels

When you import a MIDI file into a Pro Tools session, the regions all retain the MIDI channel assignments they had in the original sequence. Setting a MIDI track's Channel Selector to "Channel -*" will allow the region to play back on its original channel. If you wish to assign a different channel to the regions on a particular MIDI track, you can do so with the MIDI Device/Channel selector.

To assign all regions on a track to a specific MIDI channel:

1. Click the track's MIDI Device/Channel selector.



The MIDI Device/Channel selector

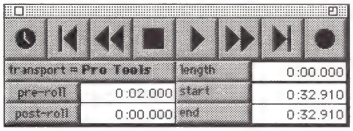
2. For the MIDI device assigned to that track, select the desired MIDI Channel.

Playing an Audio Track

Pro Tools gives you two main ways in which you can play a session. In order to hear playback, your Audio Interface and MIDI sound modules should be on and the audio outputs of your Pro Tools system connected to an amplifier and speakers. Refer to the *Pro Tools Installation Guide* for details on connecting your studio.

Using the Transport

One way to play back a track is with the Play button on the transport. The Pro Tools transport will begin playback from the current playback point. To start playback from a different point in a track, you have several options: you can enter a new time location in the Transport's start field; you can use the fast-forward or rewind buttons; you can click one of the memory location buttons (if you have defined any), or you can go to the Edit window to place the playback cursor at a new playback point.



The Transport

To play a track with the Transport:

1. Choose Show Transport Window from the Display menu.
2. Press the Play button. Playback begins.
3. To stop playback, click the Stop button.

Using the Spacebar

The second way to play a session is with the Spacebar.

To play a track with the Spacebar:

1. Press the Spacebar on your keyboard. Playback will begin at the current playback point.
2. To stop playback, press the Spacebar again.

Other playback options such as loop playback and track scrubbing are covered in the *Editing* chapter of the *Pro Tools Reference Guide*.

Adjusting the Volume and Panning of a Track

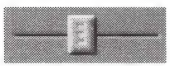
In the Mix window, each track has its own Volume fader and Pan slider for adjusting the track's playback volume and stereo placement. (Panning controls for audio tracks are only available if your session is set to Stereo Mix Outputs mode.) On audio tracks, the volume selector controls the output level of the track on your system's Audio Interface or system output jacks.

On MIDI tracks, it controls MIDI volume (controller 7) on MIDI instruments that support this feature. If a track has regions with MIDI volume controller data (created in the original sequence), its volume will be controlled by that data.

The Track Level Fader

To adjust the volume of a track:

Drag the slider to the desired level. It has a range of ∞ (no output) to +6dB of gain.



The Pan Slider

To adjust the panning of a track:

Drag the slider to the desired level. It has a range of *<100* (full left) to *100>* (full right).

Panning a track full right or full left sends it to a single output channel.

For much finer adjustment of the volume and pan controls, hold down the Command key while dragging the slider.

Keyboard Shortcut

- Option-clicking on a volume or pan control sets it to its default position of zero.

Soloing and Muting Tracks

Though a Pro Tools system can play back multiple voices of audio simultaneously, you may not always want to hear all of them playing at once. It is useful to be able to isolate playback of one or more of the tracks at any given time for arranging purposes. To do this, you will use the Solo and Mute buttons. These functions can be engaged at any time during playback.

The Solo and Mute buttons affect MIDI as well as audio. In other words, if an audio track is soloed, all other tracks in the session—audio and MIDI—will be muted (unless they are "solo-safed"). It is possible to have more than one track soloed or muted at the same time in a session.

Be aware that grouping affects mute and solo behavior as well. Normally, muting or soloing a track that is a member of an active mix group will mute or solo all other tracks that are a member of that active mix group as well. However, by changing the Mute and Solo settings in the Pro Tools Preferences dialog, you can disable this behavior if you wish.

To disable group muting of tracks:

1. From the Setups menu, choose Preferences.
2. Click the Automation button. Deselect the Mutes Follow Mix Groups option, and click OK.

Muting a track that is a member of an active group will now have no effect on the other members of the group.

To disable group soloing of tracks:

1. From the Setups menu, choose Preferences.
2. Click the Automation button. Deselect the Solos Follow Mix Groups option, and click OK.

Soloing a track that is a member of an active group will now have no effect on the other members of the group.

Mute Frees Voice and Mute Lag Time

If you choose the Mute Frees Voice command in the Options menu, a muted track's voice will be allocated to the next highest priority track assigned to the same voice. You should be aware that if you enable the Mute Frees Voice option, there may a delay (ranging in length from one to several seconds depending on the processing power of your system) between the time you mute or unmute a track and when you hear the effect on playback. To avoid this delay, make sure that the Mute Frees Voice option is disabled. Another factor than can cause delays is your DAE Playback Buffer Size setting (set from DAE's File menu). The larger the playback buffer you choose, the longer the potential lag time between the time you click the Mute button and the onset of muting.

Solo Button

The solo button mutes other tracks so that the selected track can be auditioned alone. Normally solos are "latched," that is, pressing subsequent solo buttons adds them to the soloed mix of tracks. Pro Tools allows you to "unlatch" solos, so that pressing a solo will mute all tracks except the track you have just soloed.

To solo a track:

1. Click the Solo button on the track that you wish to solo. The button will be highlighted and all other tracks will be muted (unless they, too, are soloed) and the data on them will be grayed out.
2. Click the Solo button again to turn off the solo function. If you wish to unsolo all tracks, hold down the Option key when you click the Solo button.

To unlatch solo buttons:

1. From the Setups menu, choose Preferences.
2. Click the Operation button.
3. Deselect the Latch Solo Buttons option and click Done. With this option disabled, pressing a solo button will mute all tracks except the track you have just soloed.

Solo Safe Feature

Pro Tools also allows you to *solo safe* a track by Command-clicking on the track's Solo button. This prevents the track from being muted even if you solo other tracks. This feature is very useful for tracks such as auxiliary inputs that carry effects, since it allows the track/effect to remain in a mix even when the source tracks are soloed.

To solo safe a track:

Hold down the Command key and click the Solo button on the desired track. This prevents the track from being muted even if you solo other tracks.

To return a solo safe track to normal:

Hold down the Command key and click the Solo button on the desired track again. The track will behave normally.

Keyboard Shortcuts

- Option-clicking a Solo button solos/unsolos all tracks in the session.
- Option-Shift-clicking a Solo button solos/unsolos all currently selected tracks in the session.

- Control-clicking a Solo button on a member of an active group solos only that track.
- Command-clicking a Solo button solo safes/unsolo safes the track.
- Command-Option-clicking a Solo button solo safes/unsolo safes all tracks in the session.
- Command-Option-Shift-clicking a Solo button solo safes/unsolo safes all currently selected tracks in the session.

Mute Button

The mute button silences the selected track. More than one track can be muted at one time. If the Mute Frees Voice command is enabled in the Options menu, muting a track will allocate its voice to the next highest priority virtual track in your session.

To mute a track:

Click the Mute button on the track that you wish to mute. The track will appear grayed-out and be muted.

To unmute a track:

Click the Mute button again to turn off the mute function. If you wish to unmute all tracks, hold down the Option key when you click the Mute button of a muted track.

Keyboard Shortcuts

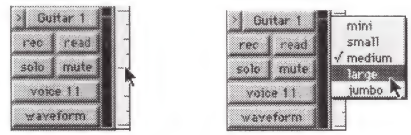
- Option-clicking a Mute button mutes/unmutes all tracks in the session.
- Option-Shift-clicking a Mute button mutes/unmutes all currently selected tracks in the session.
- Control-clicking a Mute button on a member of an active group mutes only that track.

For information on the relationship between muting and voice assignments, see the section *Virtual Tracks, Voices, and Track Priority*, earlier in this chapter.

Adjusting Track Height

Pro Tools allows you to view tracks in the Edit window at a variety of sizes, by adjusting their track height. There are five possible heights to choose from: *mini*, *small*, *medium*, *large*, and *jumbo*. Larger track heights are particularly useful for precision editing. Smaller track heights are useful for conserving screen space in a large session.

You can adjust track heights on an individual track basis or set all tracks to the same height using one of the Keyboard shortcuts given at the end of this section. This can even be done even during playback.



Adjusting Track Height

To adjust the height of tracks in the Edit window:

1. Click in the *amplitude scale* area immediately to the right of the desired track. The Track Height pop-up menu appears.
2. Select the desired track height. Pro Tools will resize the track height to the selected size.

Keyboard Shortcuts

- To set all tracks in a session to the same height, hold down the Option key and select the desired track height from the pop-up menu.

- To set all tracks currently selected on screen to the same height, hold down Shift-Option and select the desired track height from the pop-up menu.
- Hold down the Control key while selecting track height to set only that track's height if it is a member of an active group.

Adjusting Track Width

The Pro Tools Narrow Mix Window command (in the Display menu) allows you to view all tracks/channels in the Mix window at a reduced width to conserve screen space in a large session.

To reduce the width of tracks in the Mix window:

From the Display menu, select Narrow Mix Window. Pro Tools reduces the width of all tracks/channels in the Mix window.

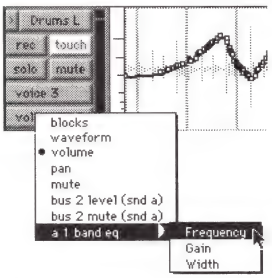
To display tracks at normal width:

From the Display menu, deselect Narrow Mix Window. Pro Tools displays all tracks in the Mix window at normal width.

Choosing a Track Display Format

In the Edit window, each audio and MIDI track features a Display Format selector. This pop-up menu allows you to individually choose how you would like to view the data on each track. For audio regions, you can choose *blocks*, *waveform*, *volume*, and *mute*. In addition, depending on the capabilities of your Pro Tools system, you can also choose *pan*, *send mute*, or any Plug-In parameter you have automated. For MIDI regions you can choose *blocks* or *notes*.

If you choose blocks, Audio and MIDI regions are displayed simply as blocks bearing the region's name. This mode is most useful when you have finished capturing and editing regions at the waveform or MIDI event level and are simply moving and rearranging them. Screen redraws are fastest in this format.



Choosing a track display format

If you choose waveform display for audio, audio regions are displayed in graphic detail as waveforms with characteristic amplitude peaks and valleys. You will probably do much of your editing in waveform display mode because of the detail that it affords. If screen redraw time is an issue on your system, you may wish to use Blocks format for faster redraws.

If you choose Notes for MIDI, MIDI events are represented as dashes with relative durations and positions on the musical scale.

When a track is displayed as volume, pan, or another automated parameter, the automation data for that track appears in the form of a line graph with a series of editable breakpoints. The breakpoints can be dragged to modify the automation data. Automation is covered in greater detail in the *Mixing* chapter of the *Pro Tools Reference Guide*.

To change the display format of a track in the Edit window:

Click the track's Display Format selector. From the pop-up menu that appears, choose the desired format. Display formats can be chosen individually for each track in a session. (If a track is a member of an

active group, all members of the group will change display formats.)

To set all tracks in a session to the same display format, hold down the Option key and select the desired format from the pop-up menu.

To set all tracks currently selected on screen to the same format, hold down Option-Shift and select the desired format from the pop-up menu.

Color Coding Tracks

The Pro Tools Color Code options in the Preferences dialog allow you to quickly identify tracks which are assigned to the same voice or group. Color coding of voices is particularly useful in sessions where you wish to make efficient use of virtual tracks. Since tracks assigned to the same voice share the same color, you can easily identify and arrange regions so that they do not overlap or conflict with other regions on tracks assigned to the same voice.

Pro Tools provides these choices for color coding:

- Enabling the Color Code Voices in Edit Window option assigns a preset color to a track according to its voice assignment (audio tracks) or MIDI channel assignment (MIDI tracks).
- Enabling the Color Code Groups in Edit Window option assigns a preset color to a track according to group ID. To appear color coded, the track must be part of a group and the group must be active.
- Enabling the No Color Code in Edit Window option turns off color coding.

To color code tracks by voice assignment:

1. Choose Preferences from the Option menu.
2. Click the Display button.
3. Select the Color Code Voices in Edit Window option, and Click OK. Pro Tools will color code tracks according to voice assignment, giving each voice a different color.

To color code tracks by group:

1. Choose Preferences from the Option menu.
2. Click the Display button.
3. Select the Color Code Groups in Edit Window option, and Click OK. Pro Tools will color code tracks according to their group assignment. To be color coded, the track must be part of an active group.

To turn off color coding:

1. Choose Preferences from the Option menu.
2. Click the Display button.
3. Select the No Color Code in Edit Window option, and Click OK to close this dialog. Pro Tools disables color coding.

Choosing a Time Scale

Pro Tools provides several different time formats for working with audio: Bars & Beats, Minutes:Seconds, Time Code (SMPTE frame numbers), Feet.Frames or Samples. The time format you choose will depend on your project.

If you are dealing mainly with MIDI, you may wish to use Bars & Beats. If you are synchronizing audio to video, you'll probably use Time Code. You may find yourself switching from format to format as you complete various editing tasks.

You can choose a time scale from either the Display menu, or from the Time Scale pop-up in the Edit window.

The Time Scale pop-up (Edit window)

Bars & Beats

Choosing this format displays the Time Scale in bars and beats. To create this time scale, Pro Tools must have some tempo data to base it on. There are three main methods for setting up your Bars & Beats tempo map — Identify Beat, Import MIDI, and MIDI Metronome. Refer to the *Editing* chapter of the *Pro Tools Reference Guide* to learn how to create a tempo with either of these methods.

Minutes:Seconds

Choosing this format displays the Time Scale in minutes and seconds. As you zoom in farther with the Zoomer, the Time Scale begins to display tenths, hundredths, and thousandths of a second.

Time Code

Choosing this format displays the Time Scale in SMPTE frames. Frame rates are chosen in the Session Setup window. Pro Tools supports the following frame rates: 24, 25, 29.97 Non-Drop, 29.97 Drop, 30 Non-Drop, or 30 Drop frames per second.

Pro Tools can be set to record or play back audio at specific SMPTE frame locations when it is online (not available with Pro Tools PowerMix). For more information see the *Working with SMPTE* chapter of the *Pro Tools Reference Guide*. All systems can display Time Code as the time scale.

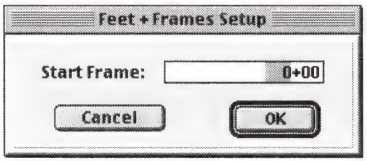
To display time in SMPTE frames:

1. From the Display menu, choose Session Setup Window. Select the appropriate frame rate from the Frame pop-up menu.
2. Select Time Code from the Time Scale pop-up in the Edit window. The Pro Tools Time Scale will display time in the SMPTE frame rate that you have chosen.

Feet.Frames

Choosing this format displays the Time Scale in feet and frames for referencing audio-for-film projects. The Feet.Frames time display is based on the 35 millimeter film format.

When you choose this time format, you have the option of entering a Start Frame for your session based on an appropriate frame location at the beginning of your project tape. Your session will then use this value as its start frame reference.



The Feet.Frames dialog

To set a start frame for a session:

1. Select Feet.Frames from the Setups menu.
2. In the dialog that appears, enter an appropriate start frame and click OK. This value will become the "zero point" of your session (negative offsets are not supported).

Samples

Choosing this format displays the Time Scale in samples. This format is very useful for high-precision sample editing.

Grouping Tracks

There are many instances where the ability to group tracks/channels and their various faders and controllers is indispensable. In an editing situation, for example, you may wish to ensure that a certain group of tracks is always edited in an identical manner. In a mixing situation, you may wish to move several faders at once, as in the case of a pair of stereo tracks or a submix, where you must keep tracks at the same relative volume level to preserve their balance.

Pro Tools provides a sophisticated yet easy-to-use relative grouping function for linking channels and/or their controllers and manipulating them as a group. Groups can be applied to either the Mix or Edit window, or both.

Pro Tools provides the following grouping features:

- Up to 26 different groups ("a" through "z")
- Groups can be nested (groups can contain subgroups)
- Grouped faders/controllers preserve their levels relative to each other

Grouping can affect the following track parameters:

- Volume levels/faders
- Solos
- Mutes
- Automation modes
- Track display format
- Track height
- Editing functions

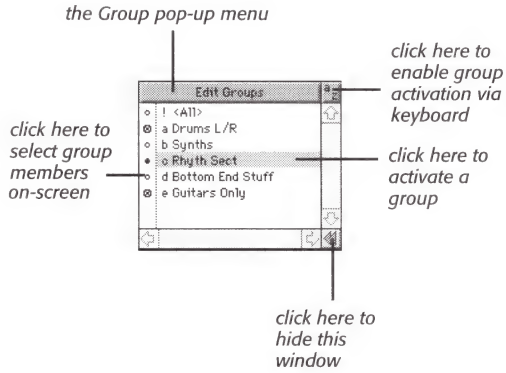
Grouping does not affect these parameters:

- Record enables
- Panning
- Voice assignment
- Output assignment
- Creating Plug-In instances

Using the Groups List

The Pro Tools grouping functions are located at the left side of your screen in the Groups List. This scrolling window contains the names of all the groups in your session, as well as a pop-up menu for accessing grouping commands. From this menu, you can select and enable groups. (See the next section for details on enabling groups.)

By default, every session has a group named *All*, which includes every track and channel in the session. The *All* group cannot be edited or deleted.


the Group pop-up menu
click here to enable group activation via keyboard
click here to select group members on-screen
click here to activate a group
click here to hide this window
Edit Groups
! <All>
a Drums L/R
b Synths
c Rhyth Sect
d Bottom End Stuff
e Guitars Only

The Groups List

To the left of each name in the Groups List is a letter denoting its Group ID ("a" through "z"), and to the left of that, a symbol indicating whether that group is selected in the currently active window (either the Edit or Mix window). These symbols indicate the following:

The filled-in circle symbol indicates that all members of the group are currently selected.

| ○ | a Rhyth Sect

The hollow circle symbol indicates that only some members of the group are currently selected.

| ⊗ | a Rhyth Sect

The circle with a dot symbol indicates that all members of the group are currently selected, plus additional members *outside* the group.

The Group Pop-up Menu

The Group pop-up menu contains commands that allow you to create, delete and suspend groups. These commands are as follows:

The Group pop-up menu

New Group This command allows you to create a new group. You must first select two or more tracks/channel strips on screen to do this.

Display This command allows you to toggle the Groups List display to either Mix Groups or Edit Groups. If all of your groups apply to both Editing and Mixing, the Groups List will be the same for both.

Suspend All Groups This command allows you to temporarily toggle all active groups off. This is often more convenient that manually disabling each group individually.

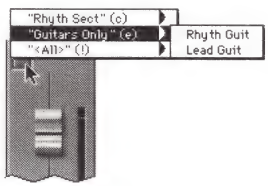
Delete Selected Groups This command allows you to permanently remove a group from the Groups List. You must first select a Group Name in the Groups List to do this.

Enabling Grouping

In order to enable a group, you must click its name in the Groups List. Once a group is highlighted here, the group is active and its members are linked on-screen. Moving a fader of any member of the group will cause all other members to move relative to it. Likewise, solos, mutes, automation and track height, data format changes and editing functions will be applied to all group members. Editing operations are not applied to members of a group that are hidden with the Show/Hide Tracks List. Mix operations (with the exception of Record-enable) are applied to hidden tracks.

To disable a group, simply click its name again so that it is no longer highlighted in the Groups List. To enable additional groups, simply click their names in the Groups List as well. It is not necessary to Shift-click to enable or disable multiple groups. If a fader belongs to multiple groups, and the groups conflict when faders are moved, the fader will follow the topmost or "parent" group that it belongs to.

Keep in mind that Pro Tools allows you to create separate groups for editing and mixing. You set this option when you use the New Group command. In addition, groups that apply to both editing and mixing can still be "decoupled" via the Link Mix and Edit Groups option in the Operation page of the Preferences dialog.



Clicking a channel's Group ID to display its group membership

To enable a group:

In the Groups List, click the name of the group you wish to enable. The group name is highlighted to indicate that it is enabled.

Moving a fader or group member will cause all other group members to move relative to it.

To disable a group:

In the Groups List, click the name of the group you wish to disable. The group name is unhighlighted to indicate that it is not enabled.

The faders of each group member will move independently.

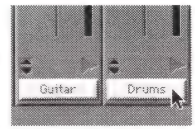
Keyboard Shortcuts

- Hold down the Control key to temporarily affect a fader or other controller that is part of an active group without affecting the other members of the group. When you release the Control key, the fader/controller returns to its group. This works for all grouped functions, including level faders, solos, mutes, track height, display format, and automation modes.
- Control-Option clicking a Group Name hides all tracks in the session except for the group members. (Control-Option-Shift-clicking allows you to display additional groups with this technique.)
- To select multiple group members on screen, Shift-click to the left of their names in the Groups List (in the area with the circular symbols).
- Command-clicking a Group Name toggles its active/inactive status, and changes all other groups to the opposite state.
- Option-clicking a Group Name enables/disables all groups except the All group.
- Command-Shift-G toggles the Suspend Groups command on and off.
- Command-clicking the Groups pop-up menu toggles the Suspend Groups command on and off as well.
- If keyboard selection is enabled for the Groups List (by clicking the small "a - z" button), you can enable a group by typing its Group ID on your computer keyboard.

Creating a Group

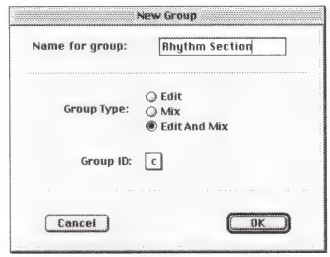
To create a group:

1. Hold down the Shift key and select the tracks you wish to include in the group.



Selecting tracks to be grouped

2. Choose New Group (Command-G) from the pop-up menu.
3. Enter a name for the group and choose a Group ID ("a" - "z").



The Define Group dialog

4. Choose the type of group you wish to create: Edit Group, Mix Group, or Edit and Mix Group.
5. Click OK. The new group is added to the Groups List.

Changing the Members of a Group

You can add or remove members from a group at any time.

To change the members of a group:

1. Hold down the Shift key and select the tracks you wish to include in the group.
2. Choose New Group (Command-G) from the Group pop-up menu. A dialog appears.
3. Select the Group ID that you wish to update.
4. Click OK. The new group definition overwrites the original definition.

Renaming a Group

You can rename a group at any time.

To rename a group:

1. In the Groups List, double-click to the left of the group's name (in the area with the circular symbols).
2. In the dialog that appears, enter a new name for the group. (If you wish to change the group's type, you can also do so here.)
3. Click OK. The group is renamed in the Groups List.

Deleting a Group

You can delete a group at any time.

To delete a group:

1. In the Groups List, select the name of the group (or groups) you wish to delete.
2. Click the Group pop-up menu and choose Delete Selected Groups.

The group is deleted from the Groups List. You cannot undo this action.

Linking Mix and Edit Groupings

The "Link Mix and Edit Group Enables" option, which is available in the Operation page of the Preferences dialog, links group enabling between the Mix and Edit windows.

Pro Tools allows you to create groups that are *both* Mix and Edit groups. The Link Mix and Edit Group Enables option determines whether or not enabling or disabling a Mix group will enable/disable its corresponding Edit group, or vice-versa.

In some cases you may prefer not to link enabling of Mix and Edit groups. For example, when you are using the Mix window for mixing, you may prefer to work with large, nested groups. However, in the Edit window, you may wish to perform editing tasks within a smaller group. In such a case, you could simply disable the Link Mix and Edit Group Enables preference. This would allow you to work with different groups in the two windows.

Outline of a Typical Pro Tools Session

When you begin a project with Pro Tools, you create a session. A session is a computer file that contains information about all of the elements associated with that particular project. When you create and save a session, Pro Tools remembers all aspects of the session setup: what sound files were associated with the session, your mixer settings, signal routing setup, EQ configurations, and other aspects of the session. When you open a session created earlier, the session appears exactly as it was saved, and the associated sound files and settings are loaded automatically.

A typical Pro Tools music project might progress like this:

1. Import some basic MIDI tracks into Pro Tools and record digital audio tracks in sync with them. Punch in any new audio you need and set basic levels for playback. When you have a rough layout of your session with audio and MIDI, open the Edit window.
2. In the Edit window, try out various arrangements of your audio and MIDI tracks—repeat verses, swap choruses, fix mistakes, and so on. Continue until the structure of your session is complete.
3. Next, switch back to the Mix window and record your MIDI tracks onto Pro Tools digital audio tracks.
4. Finally, add any EQ or effects processing, automate a full digital mixdown with EQ and effects, and mix the session to a digital stereo master on disk or DAT. The digital stereo mixdown is then ready for mastering to CD using Digidesign's optional MasterList CD™ software.

If you are using Pro Tools for audio post or broadcast production, your exact project flow may be somewhat different, but the principles are generally the same:

1. Create a session for the current reel. (Optionally, you could use Digidesign's PostConform™ application, available separately, to create a new session based on and conforming to an EDL. Consult your Digidesign dealer for information about PostConform.)
2. In the Mix window, set up your session's outputs and tracks for stem mixes; use channels 1 & 2 for music, channels 3 & 4 for sound effects, 5 & 6 for atmos/ambience, etc.
3. If available, import a QuickTime movie of the scene(s) to be spotted, or sync your Pro Tools system to an external video deck/monitor system.
4. In the Edit window, load (import) sound effects/Foley, ambience or other samples into your session's Audio Regions List.
5. Use the Pro Tools spot mode to place sounds at specific time code locations.
6. Use Loop Recording to do some dialogue replacement (also known as ADR).
7. Use the Takes pop-up to choose the best take from a loop-recorded dialogue replacement session.
8. Switch to the Mix window to automate a final mix of all your audio elements.

For details on recording, editing and mixing your Pro Tools sessions, consult the *Pro Tools Reference Guide*. The *Pro Tools MIDI Controllers Guide* provides instructions on how to use a number of third-party MIDI controllers to operate your Pro Tools Digital Audio Workstation.

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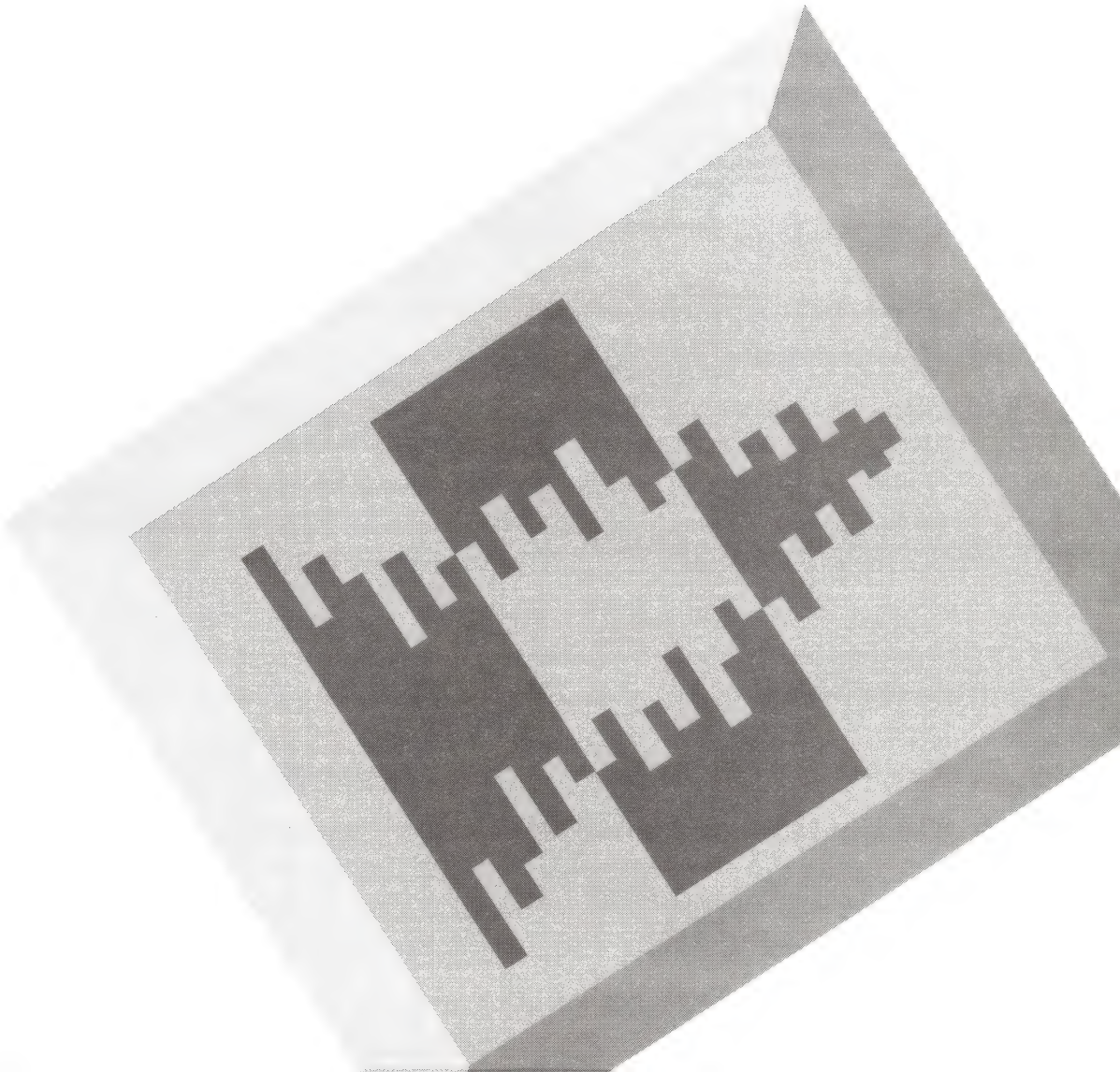

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